ORDER NO. EMID0309005C1

A4

Service Manual

Digital Ensemble

SX-PR950P

Colour

(K) .....Black

SPECIFICATIONS

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KEYBOARD	88 KEYS
SOUND GENERATOR	PCM
MAX.POLYPHONY	64 NOTES
SOUNDS	NUMBER OF SOUNDS: 1025 SOUNDS (990 SOUNDS + 2 ORGAN DRAWBARS + 33 DRUM KITS) PIANO GROUP: GRAND, UPRIGHT, ELECTRIC, MODERN SOUND GROUP: STRINGS, VOCAL, GUITAR & HARPSI,BRASS, SAX & WOODWIND, ORGAN & ACCORDION, SYNTH, BASS, MALLET & ORCH PERC, WORLD, PIANO MIXTURES, ORCH MIXTURES, DIGITAL DRAWBARS, DRUM KITS, SOUND EXPLORER
SIMPLE PIANO	supported
FAVORITES	supported
PEDAL	DAMPER, SOFT*, SOSTENUTO* (*PROGRAMMABLE)
PROGRESSIVE PIANIST	supported
TOUCH SENSITIVITY	supported
EFFECT	DIGITAL EFFECT, MULTI EFFECT, REVERB, CHORUS, BRILLIANCE
CHORUS	supported
CONDUCTOR	RIGHT 1, RIGHT 2, LEFT
TRANSPOSE	±12 NOTES
RHYTHMS	NUMBER OF RHYTHMS: 128 RHYTHMS × 4 VARIATIONS RHYTHMS GROUP: POP, ROCK, FUNC & SOUL, DISCO, POP BALLAD, BALLAD, BALL ROOM &SHOW, 8BEAT,16BEAT, USA, WALTZ & TRAD,JAZZ & SWING, LATIN & WORLD
METRONOME	Supported
CONTROLS	MAIN VOLUME, APC/ SEQUENCER VOLUME, BALANCE, MUTE, START/ STOP, INTRO & ENDING 1, INTORO & ENDING 2, FILL IN 1, FILL IN 2, COUNT INTRO, SYNCHRO & BREAK, TEMPO/ PROGRAM,TAP TEMPO, FADE IN/OUT, SPLIT POINT
AUTO PLAY CHORD	MODE: BASIC, ADVANCED 1, ADVANCED 2, PIANIST MEMORY, ON BASS, CHORD FINDER, LEFT HOLD

MUSIC STYLE ARRANGER	Supported
SOUND ARRANGER	Supported
PIANO STYLIST	Supported
ONE TOUCH PLAY	Supported
TECHNI-CHORD	Supported
PANEL MEMORY	3 BANKS X 8
SEQUENCER	16 TRACKS
	RESOLUTION: 1/96 PER BEAT
	STRAGE CAPACITY: APPROX.40000 NOTES (10 SONGS MAX.)
	INPUT MODES:
	EASY RECORD, REALTIME RECORD, STEP RECORD
	FUNCTIONS:
	RECORD & EDIT,COPY & PASTE, RANGE EDIT
COMPOSER	8 PARTS:
	BASS, ACCOMP 1-5, DRUMS1,2
	STRAGE CAPACITY:
	APPROX.13000 NOTES
	INPUT MODES:
	REALTIME RECORD, STEP RECORD
	FUNCTIONS: EASY COMPOSER
	PATTERN COPY, SEQ TOCOMPOSER, LOAD SINGLE COMPOSER
	MEMORY: 3 BANKS
DISK DRIVE	3.5 inch DISK DRIVE FOR 2HD (1.44 MB), 2DD (720 KB) LOAD, SAVE, DIRECT PLAY, SONG MEDREY, DISK TOOLS, PREFERENCES
SOUND	PART SETTING, MIXER, MUSTAR TUNING, KEY SCALING, APC REVERB SETTING, TECHNI-CHORD, SOUND LOAD OPTION, SOUND ARRANGER
REVERB & EFFECT	MIC REVERB & EFFECT, TONE CONTROL, REVERB, CHORUS, MULTI, SOUND LOAD OPTION, MIXER
CUSTOMIZE	DISPLAY TIMEOUT, DATA PROTECTION, FAVORITES SETTING, MIDI SETTING LOAD OPTION, LANGUAGE SETTING, DISK PREFERENCES
CONTROL	INITIAL, PEDAL SETTING, PANEL MEMORY MODE, MUSIC STYLE ARRANGER MODE, FADE IN/OUT SETTING

SOUND EDIT	EASY EDIT, TONE, PITCH, FILTER, AMPLITUDE, LFO, EFFECT, CONTROLLER
	MEMORY:
	40,1 USER DRUM KIT
MIDI	PART SETTING, CONTROL MESSAGES, REALTIME MESSAGES, COMMON SETTING, INPUT/OUTPUT SETTING, MIDI PRESETS, MODE SETTING
DISPLAY	LCD:
	PAGE, CONTRAST, EXIT, DISPLAY HOLD, OTHER PARTS/ TR
HELP	Supported
DEMO	Supported
TERMINALS	PHONES X 2, LINE OUT (R/ MONO,L), AUX IN (R/MONO,L), MIDI (IN, OUT), PEDAL IN, MIC (VOLUME)
OUTPUT	80W (40 W × 2)
SPEAKERS	14 cm × 2, 6.5cm × 2
POWER REQUIREMENT	110 W
	AC120/220/230-240V 50/60 Hz
	AC120V 60 Hz (NORTH AMERICA AND MEXICO)
DIMENSIONS (W×H×D)	141 cm × 161 cm × 97 cm (55x-1/ 2"× 63-3/8" x 38-3/16")
NET WEIGHT	98 kg (216.1 lbs.)
ACCESSORIES	AC CORD, INSULATOR x 3, CLOTH, POLISH

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Technics

1. Warning

To prevent the risk of fire, smoke, or electrical shock and to ensure safe operation, please be sure to follow the safety guidelines below.

1. At places where special caution is required, the necessary safety precautions are clearly labeled or printed, for example, on the cabinet, or on the part concerned. Please follow these safety

precautions, and also those listed in the Owner'sManual.

2. Parts which have a ⚠ mark in the circuit diagram or in the parts list are essential for safety. When replacing these parts, be sure to use only the specified parts.
3. Use the specified types for internal wiring (double-insulated wiring, etc.).
4. When replacing parts on the AC primary side (power transformer, electric switch, electrical cord, noise-prevention condenser, etc.), wind the lead wire and secure it by soldering.
5. Do not let the wiring come into contact with heat-emitting devices (fuse resistor, radiator plate, etc.).
6. When replacing the wiring, make sure that it is not in contact with the unfinished or rough edge of a part.
7. When replacing the power cord (except for the plug-in type), tug it from various directions to confirm that it does not slip out of place.
8. Spacing
   If soldering was done on the AC primary circuit, confirm that the interval between the soldered terminals or between the terminal and surrounding metallic parts is at least the minimum required (between the primary circuit and the chassis: atleast6.5 mm; between primary circuit terminals: at least 4.0 mm; between primary circuit terminals and secondary circuit terminals: at least 6.5 mm.).

2. Safety Precaution

2.1. Safety precaution

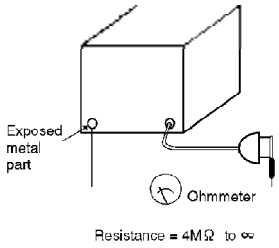
1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only the manufacturer’s recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.

4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

2.2. Insulation resistance test

1. Unplug the power cord and short the prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with an ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screw heads, connectors, control shafts, handle brackets, etc. Measurements should range from 4 M Ohm to infinity for allexposedparts.

Fig-1



3. Owners manual

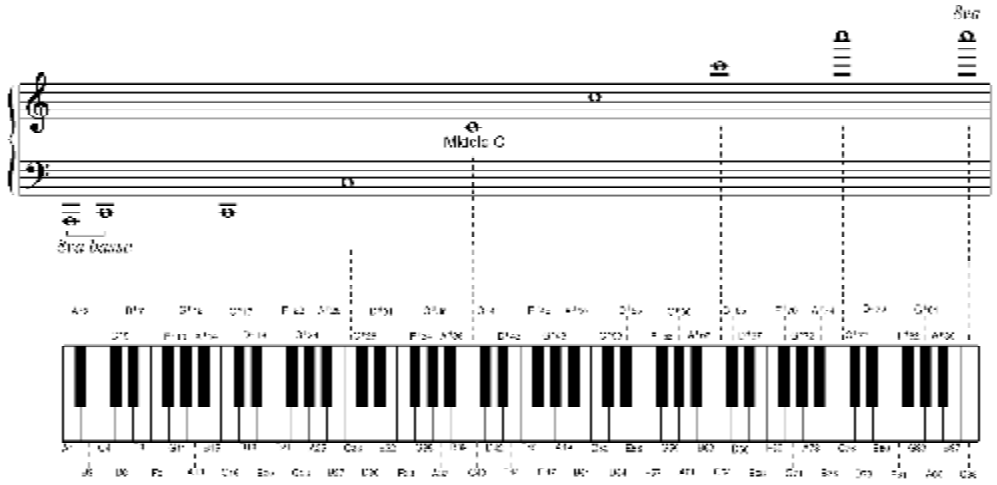
4. How to assemble the piano

5. How to open the top cover

6. Keyboard ranges

This keyboard features Touch Response, by which you control the volume by playing the keys harder or softer.

Fig-2



7. Parts location

Fig-3

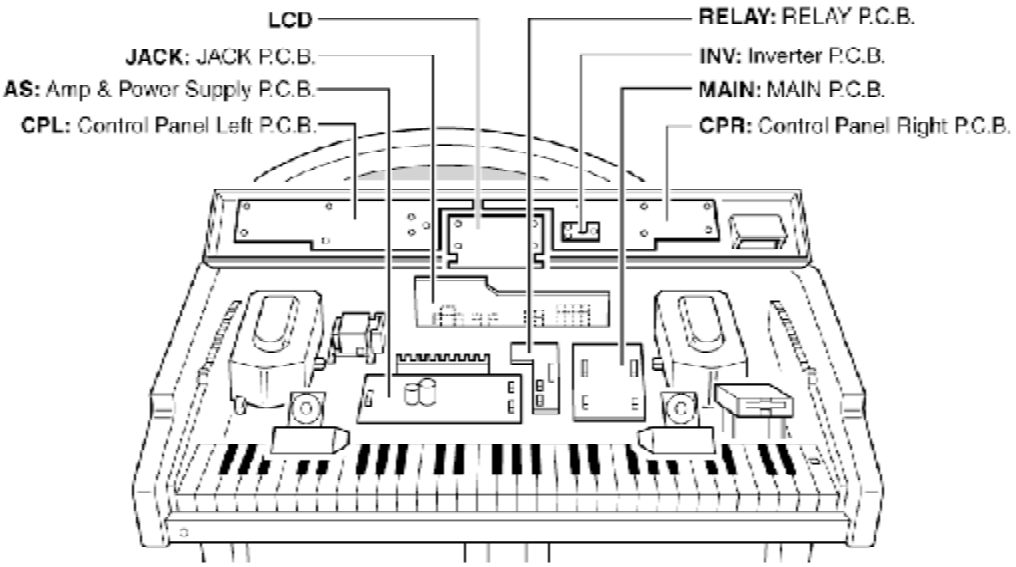
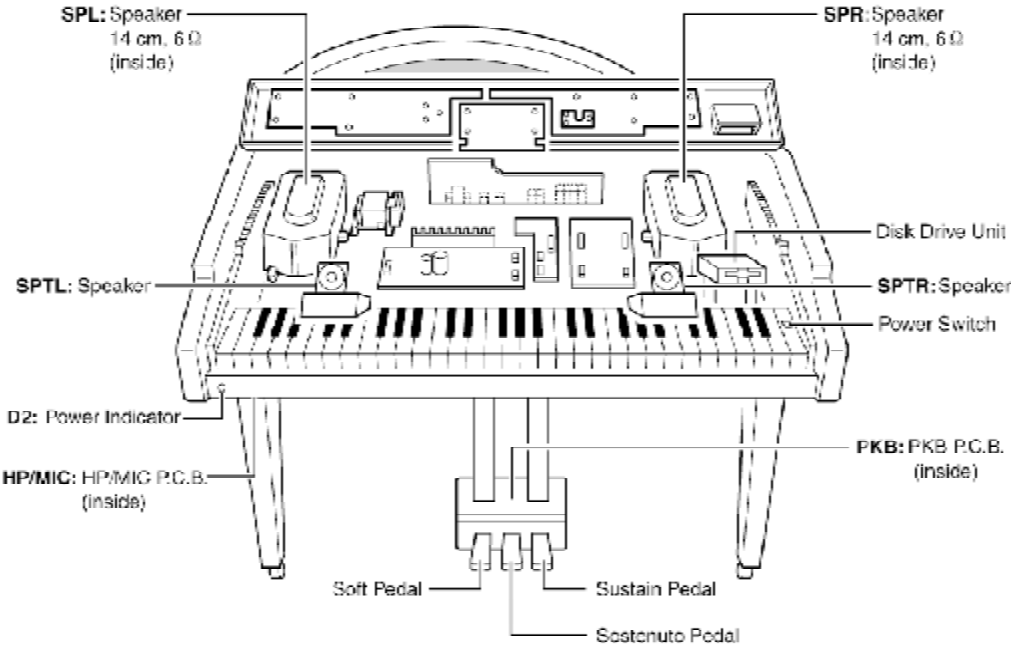


Fig-4

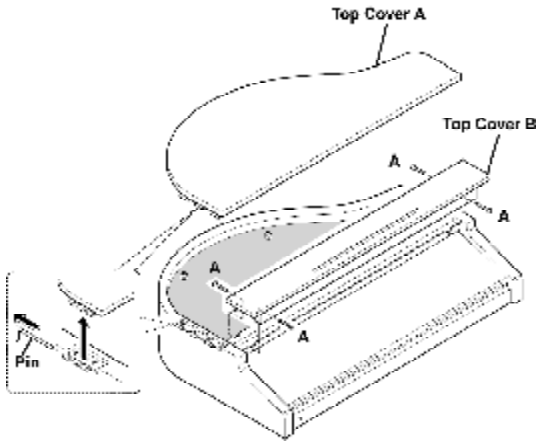


8. Disassembly instructions

8.1. Removing the top cover

1. Remove the top cover A fixing pin as shown in Fig-5 .
2. Lift up the top cover A.
3. Remove the top cover B mounting screws (A × 4 pcs.) as shown in Fig-5 .
4. Lift up the top cover B.

Fig-5



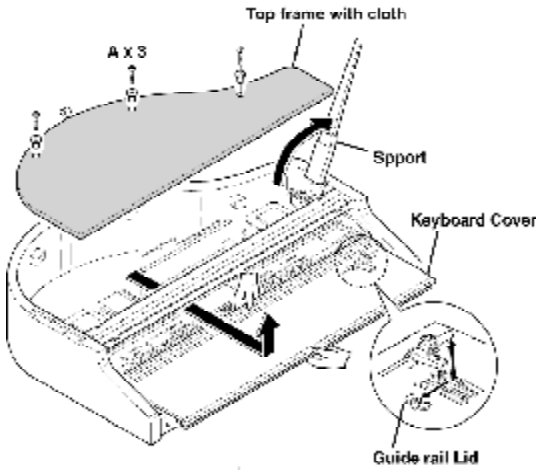
8.2. Removing the keyboard cover

1. Remove the top cover (see step "Removing the top cover ").
2. Lift the support and remove the the top frame with cloth mounting

screws (A. × 3 pcs.).

3. Remove the guide rail lids from the guide rails.
4. Match the gears of the keyboard cover with the notches in the guide rail, and lift up the keyboard cover as shown in Fig-6 .

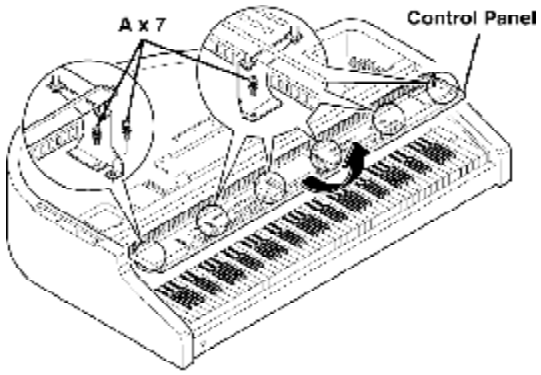
Fig-6



8.3. Removing the control panel

1. Remove the keyboard cover (see step "Removing the keyboard cover ").
2. Remove the control panel mounting screws (A × 7 pcs.) as shown in Fig-7 .
3. Slide the control panel forward and pull out (as shown by the arrows).

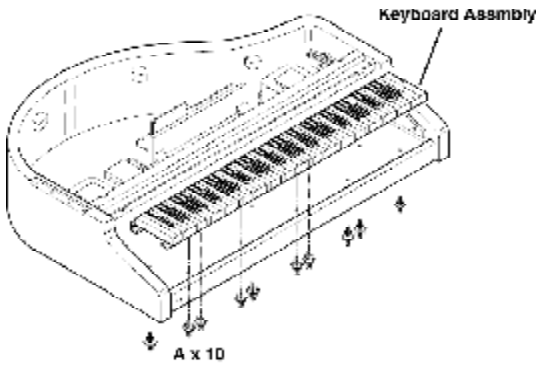
Fig-7



8.4. Removing the keyboard assembly

1. Remove the control panel (see step “Removing the control panel).
2. Remove the keyboard assembly mounting screws located on the bottom of the cabinet (A × 10 pcs.) as shown in Fig-8 .

Fig-8



8.5. Key(s)

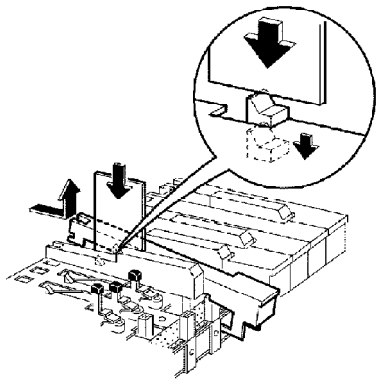
Disassembly

1. Remove the keyboard assembly (see step “Removing the keyboard assembly ”).
2. While inserting a thin plate to press down a claw, push the rear of the key forward to disengage the key claw from the chassis.
3. Lift the key up to remove it.

Note:

- The key claw is easily broken. Do not apply undue force. Should a key claw break, it can still be used.
- If a black key is to be replaced, it is necessary to remove both adjacent white keys.

Fig-9

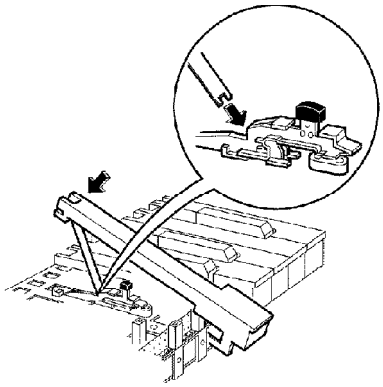


/ / / /

Assembly

1. Insert the front part of the key into the chassis.
2. Insert the plate spring into the hammer notch as shown in Fig-10 .
3. While slowly lowering the key into the chassis, insert the plate spring into the notch at the rear of the key.
4. Carefully insert the key into the opening in the chassis and slide the key towards the rear to lock it in place.

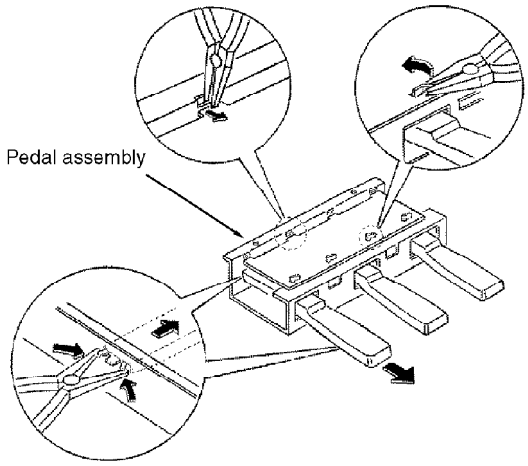
Fig-10



8.6. Disassembly of the pedal assembly

1. Remove the pedal assembly from the pedal box.
2. Disassemble the pedal assembly as shown in Fig-11 .

Fig-11



8.7. Removing the LCD,CPL P.C.B., INV P.C.B. and CPR P.C.B.

- Remove the control panel (see step “Removing the control panel ”).
- Remove the bracket mounting screws (A × 8 pcs.).
- Release the knobs.

LCD

1. Remove the LCD mounting screws (B × 4 pcs.).

CPL P.C.B.

1. Remove the CPL P.C.B. mounting screws (C × 17 pcs.).

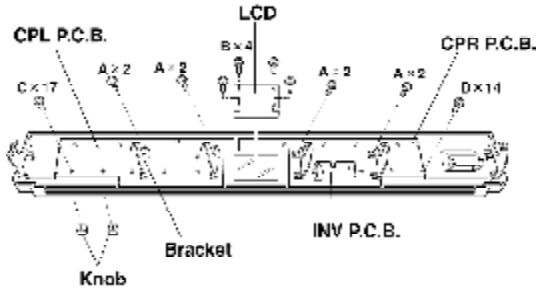
INV P.C.B.

1. Release the claws of the 3 P.C.B. holder.

CPR P.C.B.

1. Remove the CPR P.C.B. mounting screws (D × 14 pcs.).

Fig-12



8.8. Removing the printed circuit boards

- Remove the keyboard cover (see step "Removing the keyboard cover ").

- Pull out the connectors on the printed circuit boards.

MAIN P.C.B.

1. Release the claws of the 4 P.C.B. holders.

RELAY P.C.B.

1. Release the claws of the 5 P.C.B. holders.

AS P.C.B.

1. Remove the AS P.C.B. mounting screws (A x 2 pcs.).

2. Release the claws of the 5 P.C.B. holders.

JACK P.C.B.

1. Remove the JACK P.C.B. mounting screws (B x 5 pcs.).

2. Remove the JACK P.C.B. mounting nuts (C x 4 pcs.).

HP/MIC P.C.B.

1. Remove the keyboard assembly (see step "Removing the keyboard assembly ").

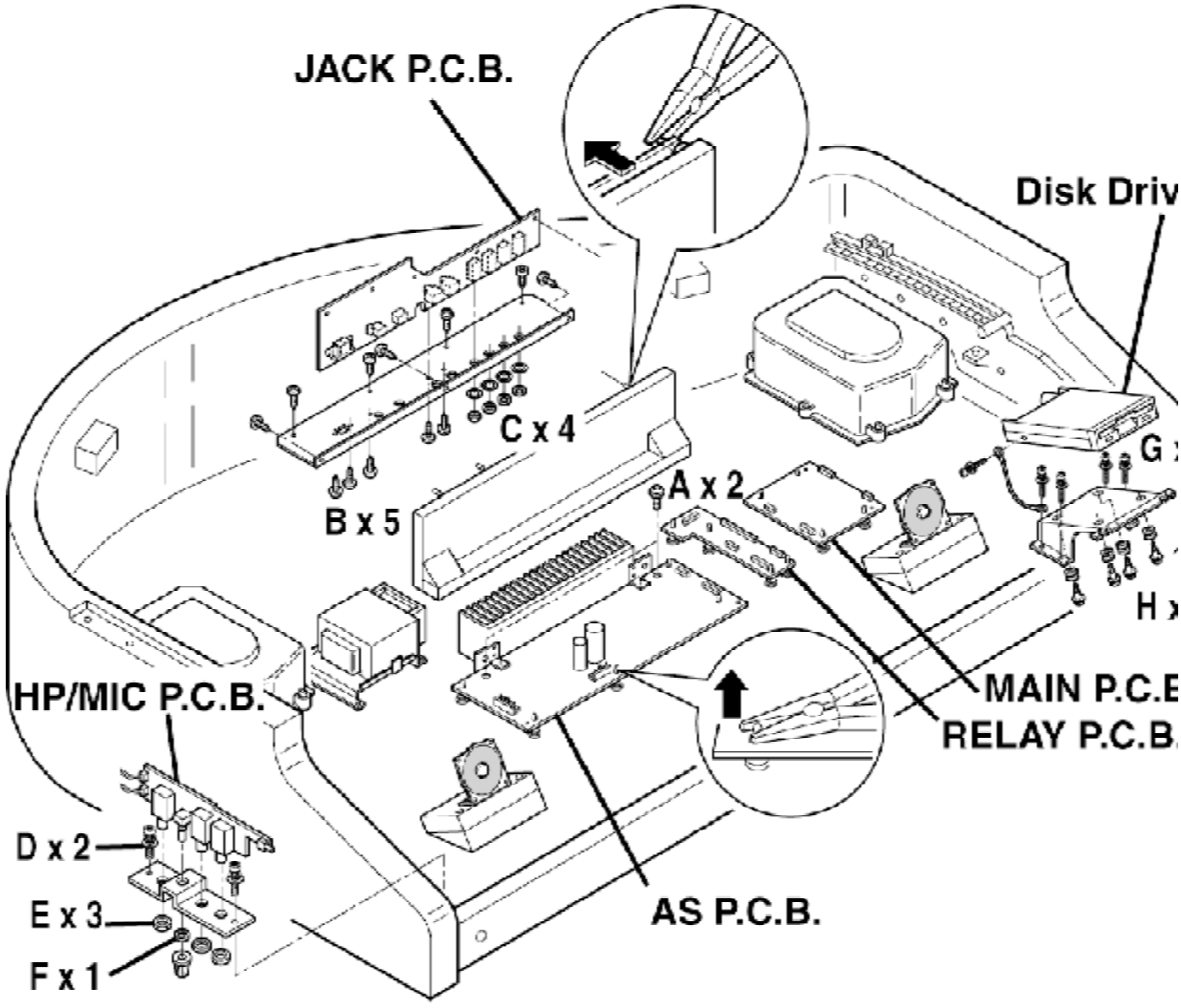
2. Remove the HP P.C.B. mounting screws (D x 2 pcs.)

3. Remove the headphone jack mounting nuts (E x 3 pcs.).
4. Remove the MIC VOL knob.
5. Remove the MIC VOL mounting nuts (F x 1 pc.).

8.9. Removing the Disk Drive unit

1. Remove the keyboard cover (see step "Removing the keyboard cover ").
2. Pull out the connector from the Disk Drive unit.
3. Remove the chassis on which Disk Drive unit is attached (G x 4 pcs.).
4. Remove the Disk Drive unit mounting screws (H x 4 pcs.).

Fig-13



8.10. Removing the Speaker boxes, woofer speakers and tweeter speakers

- Remove the keyboard cover (see step "Removing the keyboard cover ").

Removing speaker box

1. Remove the speaker box mounting screws (I x 6 pcs.).

Removing woofer speaker

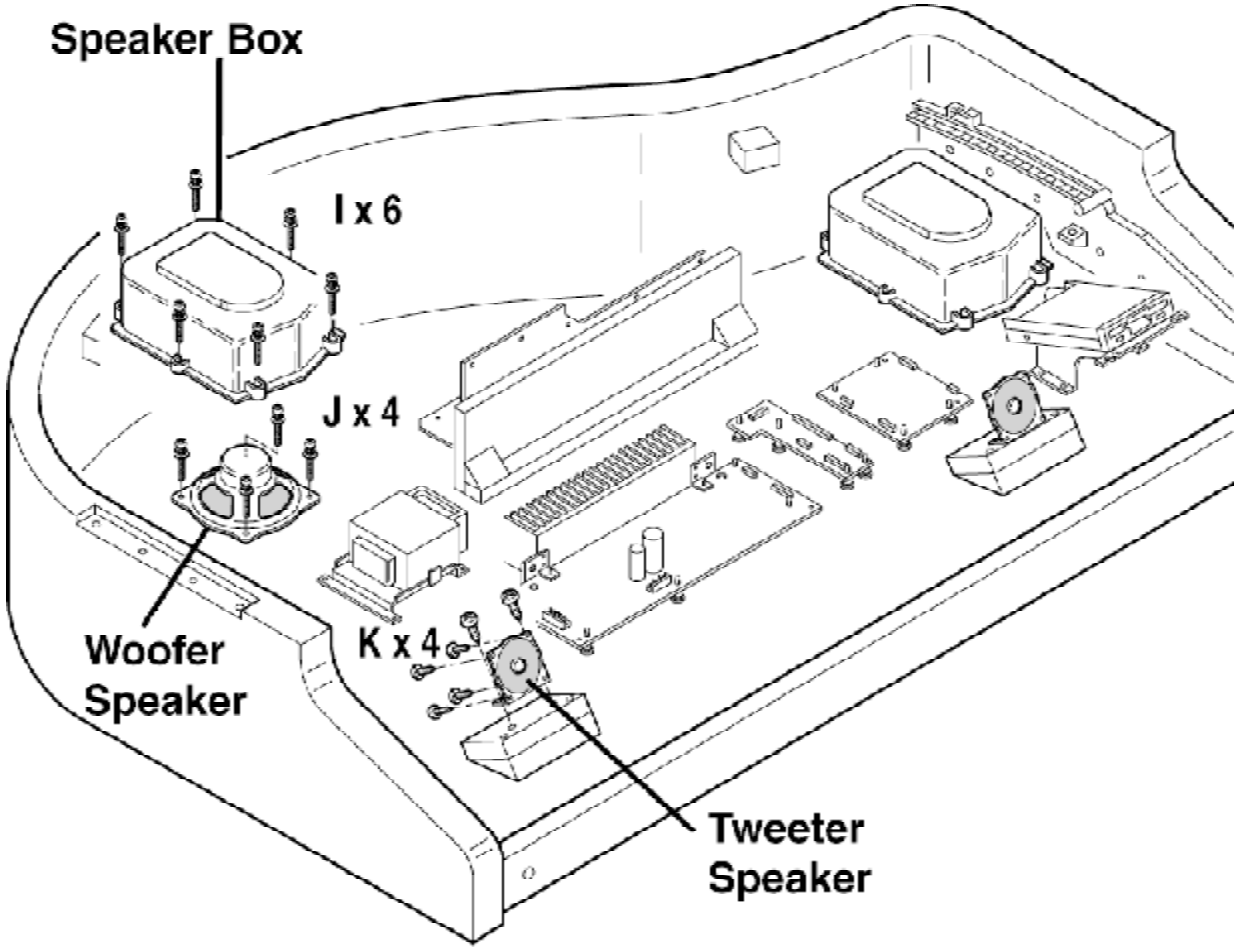
1. Remove the speaker box .

2. Remove the woffer speaker mounting screws (J x 4pcs.).

Removing tweeter speaker

1. Remove the tweeter speaker mounting screws (K x 4 pcs.).

Fig-14



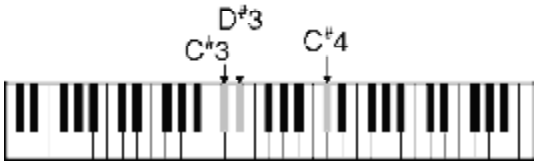
9. Service diagnostic function

The service diagnostic function makes it possible to determine whether the various test modes pass or fail. The test modes are completely independent of one another. Select a test mode as necessary, and run the test.

To set to the service diagnostic mode:

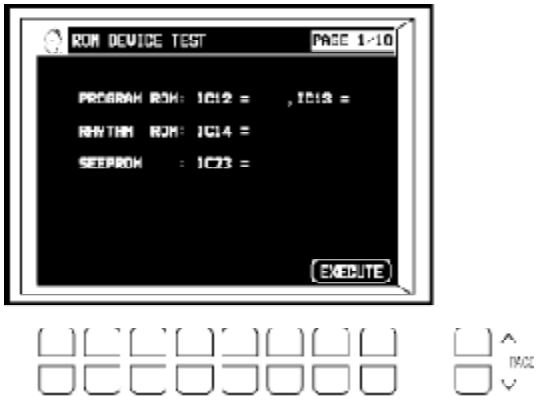
1. **Press and hold the C#3, D#3, C#4 keys, and then turn on the power switch. (refer to Fig.15)**

Fig.15



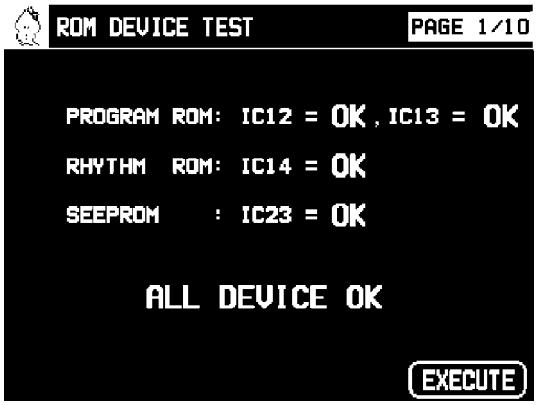
2. **After the service diagnostic screen is displayed on the LCD, release the three keys. (refer to Fig.16)**
3. **Use the page buttons to select the respective test.**

Fig.16



9.1. ROM device test

Fig.17

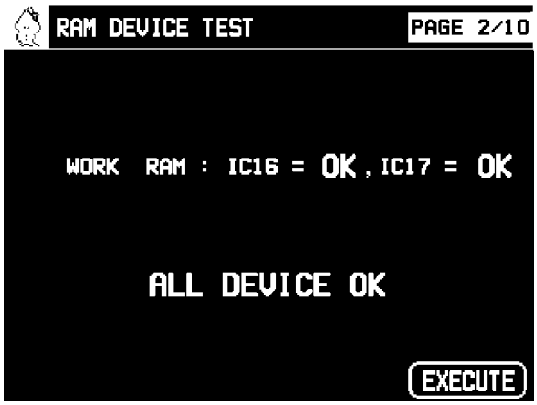


- Press the EXECUTE button to begin the test.

- The test result (OK or NG) is displayed within twenty seconds. If the test result is NG, not only the respective IC, but also a break or short circuit in the ADDRESS/DATA BUS as well as in any of the strobe signal lines may be the causeof thefailure.(refer to Fig.17)

9.2. RAM device test

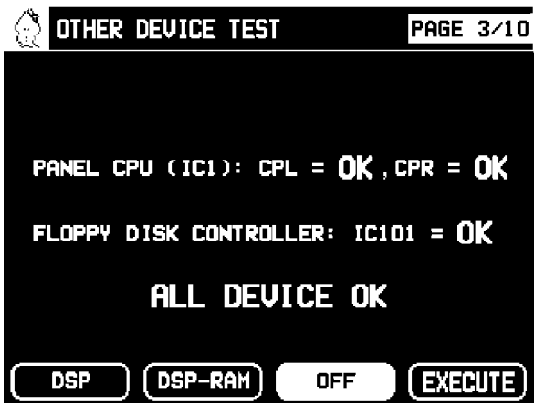
Fig.18



- Press the EXECUTE button to begin the test.
- The test result (OK or NG) is displayed within a few seconds. If the test result is NG, not only the respective IC, but a break or short circuit in the ADDRESS/DATA BUS as well as in any of the strobe signal lines may be the causeofthefailure. (refer to Fig.18)

9.3. Other device test

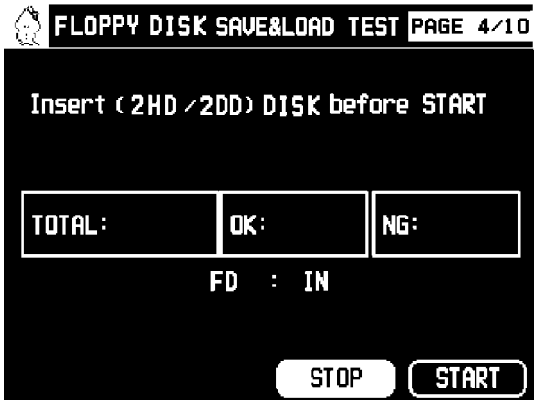
Fig.19



- Press the EXECUTE button to begin the test.
- The test result (OK or NG) is displayed with in a few seconds. If the test result is NG, not only the respective IC, but also a break or short circuit in the ADDRESS/DATA BUS as well as in any of the strobe signal lines may be thecauseof thefailure. (refer to Fig.19)

9.4. Floppy Disk SAVE/LOAD test

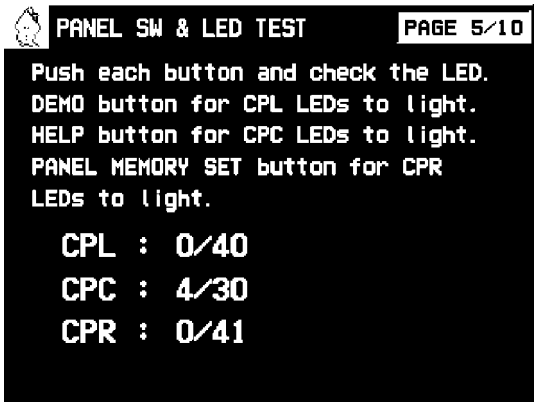
Fig.20



- Insert a formatted floppy disk into the Disk Drive. Press the START button to begin the test.
- The test is carried out repeatedly. Data is saved and loaded, and then the two data sets are compared. The number of times that the test results in OK or NG are counted and displayed on the LCD. To interrupt the test, press the STOP button.(referto Fig.20)
- Even when the Floppy Disk Drive is functioning properly, the test can result in NG. If this happens frequently, clean the magnetic heads of the Floppy Disk Drive with a cleaning disk. Then, change the disk used in testing with another disk andreperformthetest. If the trouble is not solved, it is likely that the Disk Drive unit or some other part of the hardware is broken.

9.5. Panel SW & LED test

Fig.21

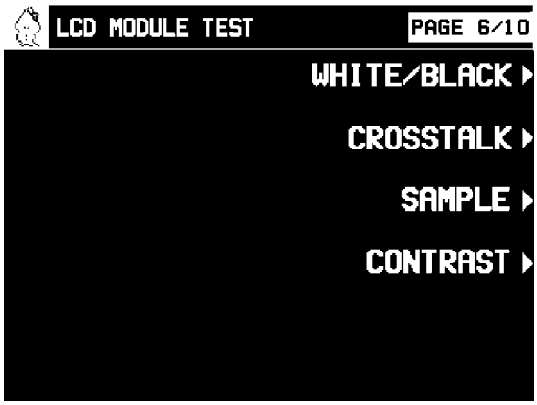

PANEL SW & LED TEST
PAGE 5/10
Push each button and check the LED.
DEMO button for CPL LEDs to light.
HELP button for CPC LEDs to light.
PANEL MEMORY SET button for CPR
LEDs to light.
CPL : 0/40
CPC : 4/30
CPR : 0/41

- Press all the buttons on the Control Panel and confirm that the corresponding LED lights.
- If an LED fails to light, the cause may be a defective switch or a break in the surrounding circuit, etc.

- After all the buttons have been pressed, all the PANEL MEMORY LEDs light. If all switches are OK, “ALL DEVICE OK” is shown on the LCD. (If a switch is defective, nothing is shown.) (refer to Fig.21)
- To light all the LEDs, press and hold the DEMO button. If an LED fails to light, the LED may be defective or there may be a break in the surrounding circuit.

9.6. LCD module test (LCD adjustment and confirmation)

Fig.22



- Press the WHITE/BLACK, CROSSTALK, SAMPLE or CONTRAST button to begin the respective test. (refer to Fig.22)

WHITE/BLACK:

All the dots light in white and finally black. The display can be held by pressing the DISPLAY HOLD button.

CROSSTALK:

An H pattern is shown. LCD crosstalk can be evaluated. To exit this test, press the EXIT button.

SAMPLE:

Several display patterns shown during normal use are shown. The display can be held by pressing the DISPLAY HOLD button.

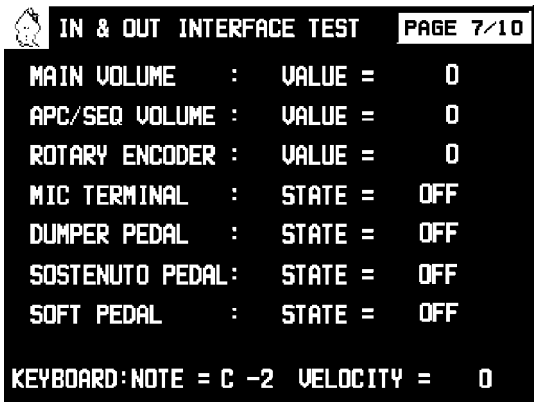
CONTRAST:

The test pattern is shown. Adjust the contrast by the CONTRAST control on the right of the LCD. To exit this test, press the EXIT button.

- If the correct display is not shown during these tests, the LCD or LCD drive circuit may be defective.

9.7. In & Out interface test

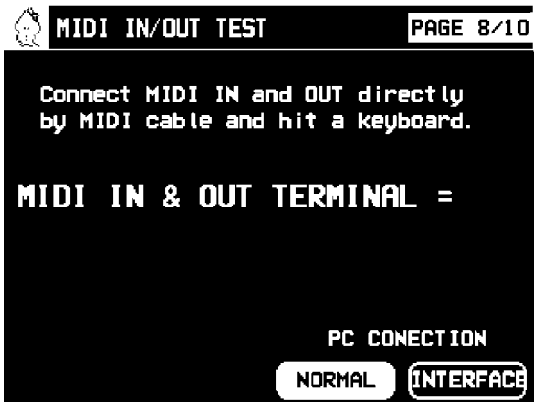
Fig.23


IN & OUT INTERFACE TEST
PAGE 7/10
MAIN VOLUME : VALUE = 0
APC/SEQ VOLUME : VALUE = 0
ROTARY ENCODER : VALUE = 0
MIC TERMINAL : STATE = OFF
DUMPER PEDAL : STATE = OFF
SOSTENUTO PEDAL: STATE = OFF
SOFT PEDAL : STATE = OFF
KEYBOARD:NOTE = C -2 VELOCITY = 0

- The operation status of each input action part can be confirmed. If the part is operating properly, “OK” is shown, excluding the Expression Pedal. (refer to Fig.23)
- When a keyboard key is pressed, the corresponding pitch and velocity aftertouch is displayed (only as long as the key is depressed).
- The respective statuses for other input action parts are displayed. (Analog parts are shown as numerical values from 0 to 255, and switches are shown as ON or OFF.)
- If the display fails to change when the part is operated, or if the change is abnormal, it may indicate a defective part.

9.8. MIDI IN/OUT test

Fig.24



- First, set the COMPUTER terminal switch to MIDI.
- Use a MIDI cable to directly connect the MIDI IN and MIDI OUT terminals.
- When a keyboard key is pressed, the transmitted and received data

are compared and the MIDI terminal operation is indicated as being OK or NG. (refer to Fig.24)

- If NG is shown, check both the IN and OUT terminals, as well as the circuit.

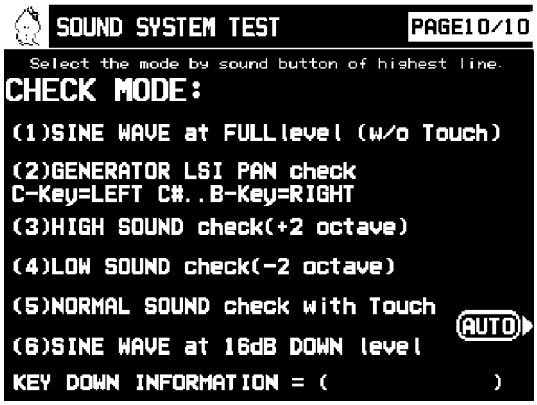
9.9. WAVE ROM test

Fig.25

- Press the EXECUTE button to start the test.
- The test result (OK or NG) is displayed within thirty seconds. If the test result is NG, not only the respective IC, but also a break or short circuit in the ADDRESS/DATA BUS as well as in any of the strobe signal lines may be the causeofthefailure. (refer to Fig.25)

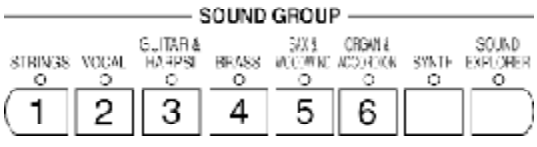
9.10. SOUND SYSTEM test

Fig.26


SOUND SYSTEM TEST
PAGE10/10
Select the mode by sound button of highest line.
CHECK MODE:
(1)SINE WAVE at FULLlevel (w/o Touch)
(2)GENERATOR LSI PAN check
C-Key=LEFT C#..B-Key=RIGHT
(3)HIGH SOUND check(+2 octave)
(4)LOW SOUND check(-2 octave)
(5)NORMAL SOUND check with Touch
(6)SINE WAVE at 16dB DOWN level
AUTO
KEY DOWN INFORMATION = ( )

- Use the button in the SOUND GROUP to select an item from 1 to 6 (refer to Fig.26 and Fig.27). Press a keyboard key.

Fig.27



1. **Generate a full amplitude sine wave in the pitch of each key. (No touch, fixed stereo center).**
   If no sound is generated or if the sound is distorted, the sound generator ROM corresponding to the key position is defective.
2. **For confirming the output pathway from the sound generator. (Fixed scale, no touch)**
   The Lch and Rch sound outputs are confirmed separately.
3. **Generate a full amplitude sine wave in the pitch of each key +2 octaves. (No touch, fixed stereo center)**
   By generating a sound frequency outside the normal keyboard zone, you can confirm whether or not there is an abnormality in the sound output frequency zone.
4. **Generates a full amplitude sine wave in the pitch of each key -2 octaves. (No touch, fixed stereo center)**
   By generating a sound frequency outside the normal keyboard zone, you can confirm whether or not there is an abnormality in the sound output frequency zone.
5. **Generate a sine wave in the pitch of each key with touch.**
   You can confirm if the volume changes depending on the touch.
6. **Generate a full amplitude sine wave in the pitch of each key at a -16 dB volume. (No touch, fixed stereo center)**
   You can confirm the same sound output as in 1, at a lower volume.

10. Precautions before servicing

10.1. Precautions for measuring of the output waveforms

1. **The waveform was measured with a “National Digital Storage Oscilloscope VP-5730A”. Therefore the waveforms of musical tone signals shown may differ somewhat due to the difference in the timing of triggering.**
2. **Since the 1/10 test probe is used, the indicated voltage value on the bottom part of each waveform illustration is 1/10 of the actual value (e.g. 0.2 V/cm should be 2.0 V/cm).**
3. **To measure the waveforms, first set this unit to the service diagnostic mode (refer to “Wave ROM check on Service**

diagnostic function "). The WAVE ROM output will then be output asasine wave to facilitate the servicing check.

10.2. Important safety notice

- Components identified by a ⚠ mark have special characteristics important for safety.
- When replacing any of these components, use only manufacture's specified parts.

10.3. Symbolic marks

The symbolic marks for resistors and capacitors which used in this circuits are classified as following Table-1 and Table-2 .

10.3.1. Resistors

- Resistors without symbolic mark are FIXED CARBON FILM RESISTORS (ERD-type).
- All resistors are 1/4 WATT, ±5 % TOLERANCE unless otherwise designated in schematic diagrams.

Table-1

SYMBOL	SPECIFICATION
F	Fixed Carbon Film Resistors "FLAME-PROOF" (ERD—F—type)
F	Fixed Wire Wound Resistors "FLAME-PROOF" (ERF—type)
F	Fixed Metal Oxide Film Resistors "FLAME-PROOF" (ERG—type)
F	Fixed Metal Film Resistors "FLAME-PROOF" (ERX—type)
G	Fixed Metal Film Resistors (Precision and High Stability) (ERO—type)
F	Fuse Type Fixed Metal Oxide Film Resistors "FLAME-PROOF" (ERQ—type)
F	Fuse Type Fixed Carbon Film Resistors "FLAME-PROOF" (ERD2FC—type)

10.3.2. Capacitors

- Capacitors without symbolic mark are POLYESTER CAPACITORS. (ECQM-type, ECQG-type, ±10% Tolerance)
- Polarized capacitors without symbolic mark are Aluminum

Electrolytic Capacitors. (ECEA-type, ±20% Tolerance)

Table-2

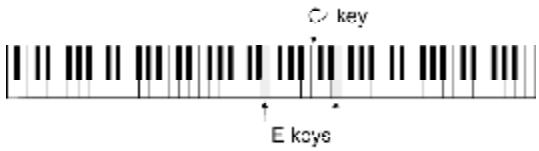
SYMBOL	SPECIFICATION	TYPE
N	Non-Polarized Electrolytic Capacitors	ECEA_KN_type
Y	Non-Polarized Electrolytic (for Network system)	ECEA_Y_type
T	Tantalum Solid Electrolytic Capacitors	ECS_type
TF	Metallized Plastic Film Capacitors (TF Series)	ECQV_type
	Temperature Compensating Ceramic Capacitors	ECC_type
	High-Dielecytric Constant Ceramic Capacitors	ECK_type, ECR_type
	Axial Lead Ceramic Capacitors	ECB_type
	Metallized Polyester Film Capacitors for Across the Line	ECQ_EW_type
	Aluminum Electrolytic Capacitors for Smoothing Circuit	ECES_type
	Multilayer Ceramic Chip Capacitors	ECUV_type

11. Measuring condition

11.1. Measuring condition of MAIN P.C.B.

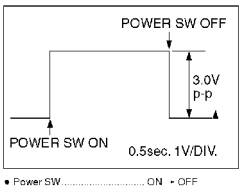
Check Point 2 - 5
Set to the Self-diagnostic Mode followings.

- **While pressing two E keys simultaneously, turn on the power switch.**
- **SOUND: BRASS**
- **MAIN VOLUME: Max.**
- **Keyboard: C4**



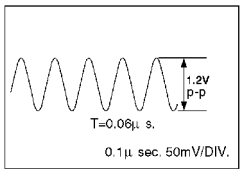
Check Point 1
Set to the Initial mode (refer to "Owners manual ").

❶ RESET

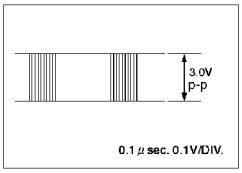


• Power SW.....ON • OFF

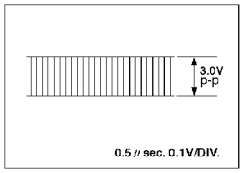
❷ TG CLOCK



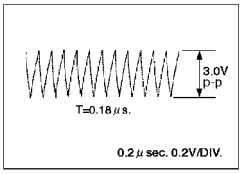
❸



❹



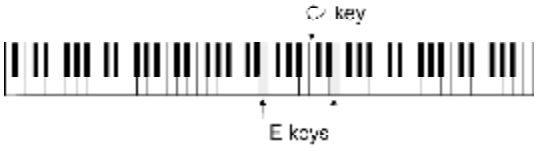
❺



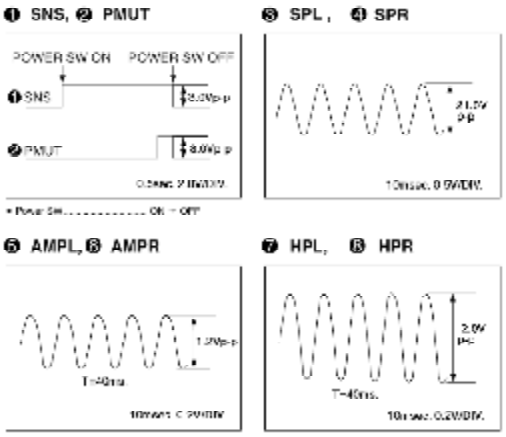
11.2. Measuring condition of AS P.C.B.

Check Point 3 - 8
Set to the Self-diagnostic Mode followings.

- **While pressing two E keys simultaneously, turn on the power switch.**
- **SOUND: BRASS**
- **MAIN VOLUME: Max.**
- **Keyboard: C4**



Check Point 1,2
Set to the Initial mode (refer to "Owners manual ").



12. Schematic diagram

13. Printed circuit board

14. Block diagram

15. Wiring connection diagram

16. Replacement parts list

Notes:
***Important safety notice:**
Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacture's specified parts shown in the parts list.
***Warning: This product uses a laser diode. Refer to caution statements.**
***ACHTUNG: Die lasereinheit nicht zerlegen. Die lasereinheit darf nur gegen einc vom hersteller spezifizierte einheit ausgetauscht werden.**
***Capacity values are in microfarads (uF) unless specified otherwise. P=Pico-farads (pF), F= farads (F)**
***Resistance values are in ohms, unless specified otherwise. 1K=1,000 (OHM), 1M=1,000K (OHM)**
***The marking <RTL> indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retentionperiodof availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.**
***The marking (1 set) indicates that part No."RFKFXPR950 "contents IC12 and IC13.**
***The marking <PASC> *1 indicates that are supplied by Matsusita Electric Corporation of America Panasonic Services Company , the others are supplied by ASPC.**

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1	SBNG7050A	KNOB	2	
2	QKWG028AC	LCD PANEL	1	
3	QMRG2052AA	COVER	1	
4	QGPG0118ED	CONTROL PANEL	1	
5	QMFG1283AA	FELT	1	
6	QGUG1347BA	BUTTON A	1	
7	QGUG1348CA	BUTTON B	1	
8	QGUG1349BA	BUTTON C	1	
9	QGUG1350BA	BUTTON D	1	
10	QGUG1351BA	BUTTON E	1	
11	QGUG1352DA	BUTTON F	1	
12	QGUG1352EA	BUTTON G	1	
13	QGUG1353DA	BUTTON H	1	
14	QGUG1354BA	BUTTON J	1	
15	QGUG1356DA	BUTTON K	1	
16	QGUG1357DA	BUTTON L	1	
17	QGUG1357EA	BUTTON M	1	
18	QGUG1358BA	BUTTON N	1	
19	QGUG1359DA	BUTTON O	1	
20	QGUG1359EA	BUTTON P	1	
21	QGUG1360CA	BUTTON Q	1	
22	QGUG1361BA	BUTTON R	1	
23	QGUG1362GA	BUTTON S	1	
24	QGUG1431BA	BUTTON T	1	
25	QGUG1432CA	BUTTON U	1	
26	QGUG1433BA	BUTTON V	1	
27	QGUG1434BA	BUTTON W	2	
28	QGUG3002BB	DIAL WHEEL KNOB	1	
29	QMRG7077AA	DIAL WHEEL SUPPORT	1	
30	QMRG1019AA	PCB SUPPORT	3	
32	QMRG7086AA	LID GUIDE	2	
33	QKSGG020BB	GUIDE(LEFT)	1	
34	QKSGG021BB	GUIDE(RIGHT)	1	
35	QMFG4103AA	CUSHION	1	
36	QLZG017A	CORE	6	
37	QAUG033AA	DISK DRIVE UNIT	1	
38	QMFG1220AA	FELT	1	
39	QMGG029AA	FLOATING RUBBER	4	
40	QEXGRA01007H	WIRE	1	
41	QLZG021A	CORE	2	
42	L5DZBLK00002	LCD	1	
43	5390142L7	CABINET	1	<PASC>*1
44	QGNGPR950MB	NAME PLATE	1	
45	QMRG2124AA	SHEET A	1	
46	QMRG2125AA	SHEET B	1	
47	SNEG770A	WASHER	4	
48	XNS12FZ	NUT	4	
49	QMFG1253AA	FELT	2	
50	T984168L7RIC	TOP COVER(FRONT SIDE)	1	<PASC>*1
50-1	QMFG1222AA	FELT	3	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
51	T984167L7RIC	SLIDE COVER	1	<PASC>*1
51-1	QGKG0095AD	ORNAMENT	1	
51-2	QMFG1258AA	FELT	2	
51-3	QMRG7031EC	PROTECTOR(L)	1	
51-4	QMRG7032EC	PROTECTOR(R)	1	
51-5	QMFG1259AA	FELT	2	
51-6	XTB4+10B	SCREW	2	
51-7	XTT4+12AFZ	SCREW	1	
51-8	XTT4+10A	SCREW	8	
51-9	QXQG007AA	AXLETREE	1	
51-10	QMRG7056AA	HOLDER	2	
51-11	QWBG002AA	HOLDER	1	
54	T984169L7RIC	PEDAL BOX	1	<PASC>*1
54-1	QMFG1286AA	FELT	3	
55	QMRG5157AA	FELT	2	
56	QMBG009AA	SPRING	3	
57	QMFG1133AA	FELT	3	
58	QMFG1134AA	FELT	3	
59	QMFG1135AA	FELT	3	
60	QMWG4008AA	PEDAL ARM	3	
61	QMRG5228AA	FELT	2	
62	XTW3+10Q	SCREW	36	
63	XYA35+JA12	SCREW	26	
64	QHDG055AA	SCREW	12	
65	XTT4+20A	SCREW	8	
66	XYN4+F16	SCREW	4	
67	XNS12	NUT	3	
68	QHDG021AA	SCREW	10	
69	QHDG043AA	SCREW	4	
70	XYN3+F6	SCREW	1	
71	XTB35+16A	SCREW	12	
72	XTN4+50AFZ	SCREW	2	
73	XYN4+F20FZ	SCREW	3	
75	QEXGRA01080B	WIRE	2	
76	XTB35+14A	SCREW	4	
78	XTT4+14A	SCREW	2	
79	XTT4+25A	SCREW	3	
80	XYE3+FG12	SCREW	8	
81	XTW3+10T	SCREW	8	
82	QQLG188AA	FCC LABEL	1	
83	QQLG238AA	HP/MIC LABEL	1	
84	XNS9	NUT	1	
85	SBNG4010A	VOLUME KNOB	1	
86	QMFG9020AA	SOUND CUSHION	2	
87	QMFG1169AA	FELT	2	
88	XTB3+10JFZ	SCREW	5	
89	QQLG009AB	COUTION LABEL	1	⚠
90	QQLG241AA	COUTION LABEL	1	⚠
120	XTW3+10T	SCREW	16	
121	QGUG1040AA	BUTTON,POWER	1	
122	QGPG0139BC	END COVER PANEL LEFT	1	
123	QGPG0138BE	END COVER PANEL RIGHT	1	
124	QMFG1104AA	FELT	2	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
125	QMWG1041AA	WHITE KEY(FIRST OCT A KEY	1	
126	QMWG1042AA	WHITE KEY(B KEY)	8	
127	QMWG1043AA	WHITE KEY(C KEY)	7	
128	QMWG1044AA	WHITE KEY(D KEY)	7	
129	QMWG1045AA	WHITE KEY(E KEY)	7	
130	QMWG1046AA	WHITE KEY(F KEY)	7	
131	QMWG1047AA	WHITE KEY(G KEY)	7	
132	QMWG1048AA	WHITE KEY(A KEY)	7	
133	QMWG1049AA	WHITE KEY(TOP OCTAVE C KE	1	
134	QMWG2006AA	BLACK KEY	36	
135	QMCG011CA	SPRING	88	
136	QMWG9027AA	HAMMER(BLACK KEY)	8	
137	QMWG9027AB	HAMMER(BLACK KEY)	14	
138	QMWG9027AC	HAMMER(BLACK KEY)	7	
139	QMWG9027AD	HAMMER(BLACK KEY)	7	
140	QMWG9025AA	HAMMER(WHITE KEY)	12	
141	QMWG9025AB	HAMMER(WHITE KEY)	19	
142	QMWG9025AC	HAMMER(WHITE KEY)	11	
143	QMWG9025AD	HAMMER(WHITE KEY)	10	
144	QMGG060BA	RUBBER CAP(HAMMER)	88	
145	QMWG8045AA	KEY GUIDE	88	
146	QMWG8041AA	FULCURUM(4 PCS.ON ONE)	1	
147	QMWG8040AA	FULCURUM(12PCS,ON ONE)	7	
148	QMFG1267BA	FELT	2	
149	QMFG1268BA	FELT	2	
150	QMFG1266BA	FELT	4	
151	QMFG1265AA	FELT	2	
152	QMWG6021AA	RUBBER SWITCH	1	
153	QMWG6020AA	RUBBER SWITCH	7	
154	QMWG8038AA	HAMMER SUPPORT(WHITE KEY)	52	
155	QMWG8039BA	HAMMER SUPPORT(BLACK KEY)	36	
156	XTV3+20JFZ	SCREW	2	
157	XTV3+12G	SCREW	4	
201	5399028L7	MUSIC REST	1	<PASC>*1
202	400019	ADHESIVE BUMPON 3M	2	<PASC>*1
203	150033	HINGE	2	<PASC>*1
204	925210297	SCREW	12	<PASC>*1
205	852047	GOLDEN BAR FOR PEDAL BOX	2	<PASC>*1
206	92462585D	SCREW	4	<PASC>*1
207	365032L7	LEG	3	<PASC>*1
208	924630853	SCREW M6X30(BLACK)	12	<PASC>*1
209	7944618D3	WASHER 6X18(BLACK)	12	<PASC>*1
210	852017L7	METAL SUPPORT	1	<PASC>*1
211	924620853	SCREW M6X20(BLACK)	4	<PASC>*1
212	785015	WHEEL FOR PIANO VISCOUNT	3	<PASC>*1
213	9245122253	SCREW M5X12(BLACK)	12	<PASC>*1
214	924640853	SCREW M6X40(BLACK)	2	<PASC>*1
215	640028	ADJUSTER BOLT	2	<PASC>*1
216	5391092L7F1	TOP COVER(REAR SIDE)	1	<PASC>*1
217	400020	ADHESIVE BUMPON 3M	6	<PASC>*1
218	620016VZ	GUIDE PIN FOR TOP COVER	1	<PASC>*1
219	090026VZ	SUPPORT HOLDER(BRASS)	1	<PASC>*1
220	5395141V7C	TOP FRAME WITH CLOTH	1	<PASC>*1
221	79483125	PLASTIC WASHER	3	<PASC>*1

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
222	925330193	SCREW 3.5X30(BLACK)	3	<PASC>*1
223	5396082L7	SUPPORT FOR TOP COVER	1	<PASC>*1
224	150029C	HINGE	1	<PASC>*1
225	925316297	SCREW	9	<PASC>*1
226	150042	HINGE FOR TOP COVER	1	<PASC>*1
227	925335193T	SCREW 3.5X35(BLACK)	4	<PASC>*1
228	92541629D	SCREW 4X16(GOLD COLORED)	5	<PASC>*1
229	92532529D	SCREW	10	<PASC>*1
230	7944612D3	WASHER 6X12(BLACK)	3	<PASC>*1
231	040234VZ	METAL BRACKET(BRASS)	1	<PASC>*1
232	703001	SPEED NUT FOR SCREW 3.5	4	<PASC>*1
A1	QQFGPR950AA	FAN BAG	1	
A1-1	QQTG0701C	O/I BOOK	1	
A1-2	QQCG0446B	REFERENCE GUIDE	1	
A2	K2CBED00001	AC CORD	1	⚠
A3	QFBG034AA	CLENEER	1	
A4	SHRG9620A	CORD CLAMPER	4	
A5	SPBG3360A	INSULATER	1	
P1	SPFG20B	BAG	1	
P2	SPHG810A	BAG	1	
SPL	QASG14P02A	SPEAKER,14CM 6W	1	
SPR	QASG14P02A	SPEAKER,14CM 6W	1	
SPTL	QASG65PH03A	6.5CM SPEAKER	1	
SPTR	QASG65PH03A	6.5CM SPEAKER	1	
SW1	QSPG1010AA	SW,POWER	1	⚠
T1	QTPG1M022A	POWER TRANSFORMER	1	G4C6AFD00002 ⚠
W1	QEXGVH03120B	WIRE WITH CONNECTOR	1	
W2	QEXGST06170A	WIRE WITH CONNECTOR	1	HP.MIC-AS
W3	QEXGSS16105A	WIRE WITH CONNECTOR	1	MKB-MAIN
W4	QEXGVH06145B	WIRE WITH CONNECTOR	1	AS-SP
W5	QEXGZA05063B	WIRE WITH CONNECTOR	1	CPL-CPR-MAIN
W6	QEXGSS14040A	WIRE WITH CONNECTOR	1	JACK-MAIN
W7	QEXGSS04010A	WIRE WITH CONNECTOR	1	CPR-INV
W8	QEXGZA34086A	WIRE WITH CONNECTOR	1	FDD-MAIN
W9	QEXGSS08040A	WIRE WITH CONNECTOR	1	JACK-RELAY
W10	K1EA04DD0002	PEDAL CORD	1	
W11	QEUGMWW10C	WIRE WITH CONNECTOR	1	MAIN-RELAY
W12	QEXGST05170B	WIRE WITH CONNECTOR	1	HP.MIC-RELAY
W13	QEXGVH04170B	WIRE WITH CONNECTOR	1	AS-6.5CM SP
<MAIN P.C.B.>				
PCB1	SXPG239641	MAIN P.C.B.	1	[RTL]

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C1	ECJ1VG1H101J	100P	1	
C2	ECJ1VB1C104K	0.1U	1	
C3	ECJ1VB1A224K	0.22U	1	
C4-10	ECJ1VB1C104K	0.1U	7	
C11	ECJ1VB1H103K	0.01U	1	
C12-15	ECJ1VB1C104K	0.1U	4	
C16	ECJ1VG1H030C	3P	1	
C17	ECJ1VB1C104K	0.1U	1	
C18	ECJ1VG1H030C	3P	1	
C19-22	ECJ1VB1C104K	0.1U	4	
C23-26	ECJ1VG1H101J	100P	4	
C27	ECJ1VG1H221J	220P	1	
C28-32	ECJ1VB1C104K	0.1U	5	
C35,36	ECJ1VB1C104K	0.1U	2	
C38	ECJ1VB1C104K	0.1U	1	
C101	ECJ1VB1C104K	0.1U	1	
C102-07	ECJ1VG1H221J	220P	6	
C108	ECJ1VB1C104K	0.1U	1	
C109	ECJ1VG1H100D	10P	1	
C110	ECJ1VB1C104K	0.1U	1	
C111	ECJ1VG1H100D	10P	1	
C112	ECJ1VB1C104K	0.1U	1	
C113	ECJ1VG1H101J	100P	1	
C114	EEVHB1H1R0R	50V 1U	1	
C115	ECJ1VB1C104K	0.1U	1	
C116	EEVHB1H1R0R	50V 1U	1	
C117	ECJ1VB1C104K	0.1U	1	
C118	ECJ1VG1H221J	220P	1	
C119-21	ECJ1VB1C104K	0.1U	3	
C122	ECJ1VG1H101J	100P	1	
C123-25	ECJ1VB1C104K	0.1U	3	
C126,27	ECJ1VG1H470J	47P	2	
C128,29	ECJ1VB1C104K	0.1U	2	
C130	ECJ1VB1H103K	0.01U	1	
C131,32	ECJ1VB1C104K	0.1U	2	
C133-36	ECJ1VG1H101J	100P	4	
C137	ECJ1VB1C104K	0.1U	1	
C201,02	ECJ1VB1C104K	0.1U	2	
C203,04	ECJ1VG1H100D	10P	2	
C205-07	ECJ1VB1C104K	0.1U	3	
C208	ECJ1VG1H102J	0.001U	1	
C209-13	ECJ1VB1C104K	0.1U	5	
C214	EEEFK0J102P	6V 1000P	1	
C215	ECJ1VB1H222K	2200P	1	
C216	EEVHB0J470R	6V 47U	1	
C217	EEVHB0J101P	6V 100U	1	
C218,19	ECJ1VB1C104K	0.1U	2	
C220,21	ECJ1VG1H471J	470P	2	
C222	EEVHB1H1R0R	50V 1U	1	
C223	EEEFK0J102P	6V 1000P	1	
C224-26	ECJ1VB1C104K	0.1U	3	
C227	EEVHB1C100R	16V 10U	1	
C228	EEVHB0J470R	6V 47U	1	
C229	EEVHB1C100R	16V 10U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C230,31	ECJ1VB1C104K	0.1U	2	
C232	EEVHB0J101P	6V 100U	1	
C233	ECJ1VB1C104K	0.1U	1	
C234,35	EEVHB1H1R0R	50V 1U	2	
C236	ECJ1VB1H222K	2200P	1	
C238,39	ECJ1VB1A224K	0.22U	2	
C241	ECJ1VG1H102J	0.001U	1	
C242	ECJ1VG1H101J	100P	1	
C243,44	ECJ1VG1H470J	47P	2	
C245,46	ECJ1VB1C104K	0.1U	2	
C247	EEEFK1J470P	63V 47U	1	
C248	EEVHB1H1R0R	50V 1U	1	
C250	EEVHB1H1R0R	50V 1U	1	
C251	ECHU1H104JC9	0.1U	1	
C252-54	ECJ1VB1C104K	0.1U	3	
C256,57	ECJ1VG1H470J	47P	2	
C258,59	EEVHB1H1R0R	50V 1U	2	
C260	ECJ1VB1C104K	0.1U	1	
C261,62	EEVHB1H1R0R	50V 1U	2	
C302	ECJ1VG1H100D	10P	1	
C303	ECJ1VG1H221J	220P	1	
C304	ECJ1VG1H100D	10P	1	
C305-10	ECJ1VB1C104K	0.1U	6	
C311-15	ECJ1VG1H101J	100P	5	
C316-23	ECJ1VB1C104K	0.1U	8	
C419	ECJ1VB1C104K	0.1U	1	
C424	ECJ1VB1C104K	0.1U	1	
C426	ECJ1VB1C104K	0.1U	1	
C436,37	ECJ1VB1C104K	0.1U	2	
C439,40	ECJ1VB1C104K	0.1U	2	
CN101	K1KA15A00116	CONNECTOR(15P)	1	
CN103	K1KA14A00197	CONNECTOR(14P)	1	
CN105	K1KA05A00257	CONNECTOR(5P)	1	
CN107	K1KA14A00197	CONNECTOR(14P)	1	
CN110	TJSF43711	CONNECTOR(11P)	1	K1KA11B00040
CN201	TJSF21630	CONNECTOR(30P)	1	K1MN30A00024
CN302	K1KA16A00172	CONNECTOR(16P)	1	
D1-D3	MA2J11100L	DIODE	3	
D101	MA2J11100L	DIODE	1	
D201	MA2QD0100L	DIODE	1	
D202	MAZ80560ML	DIODE	1	
D203	MAZ80330HL	DIODE	1	
D204,05	MA2QD0100L	DIODE	2	
D206	MA2J11100L	DIODE	1	
D207	MA3X152E0L	DIODE	1	
D209	MA3X152E0L	DIODE	1	
D210	MA2QD0100L	DIODE	1	
D211	MAZ80560ML	DIODE	1	
D214	MAZ82000HL	DIODE	1	
D215	MAZ80510LL	DIODE	1	
D218,19	MA2J11100L	DIODE	2	
D301-08	MA2J11100L	DIODE	8	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
IC1	C0JBAN000098	IC	1	
IC2	MN103002A	32BIT MICRO CONTROLLER	1	
IC3	TC7SH02FU	IC	1	C0JBAD000071
IC5	C0JBAE000140	IC	1	
IC6	C0ZBZ0000667	SPECTRAM IC	1	
IC7	C0JBAA000255	IC	1	
IC9	T74VHC08FTL	IC	1	C0JBAA000117
IC10,11	C3ABMG000166	16MDRAME	2	
IC12,13	RFKFXPR950	FLASH ROM	1	
IC14	C3ZBP0000006	64M FLASH ROM	1	
IC18	TC7W32FUTL	IC	1	C0JBAE000098
IC21,22	C0JBAF000232	IC	2	
IC23	C3EBDC000020	EEPROM(2K)	1	
IC101	C0JBAB000180	IC	1	
IC102	C1DB00000607	FDC	1	
IC103	T74VHCT541FT	IC	1	
IC104	C0HBA0000134	IC	1	
IC105	C0JBAZ001264	IC	1	
IC106	TC7S14F	IC	1	
IC107	C0JBAZ001264	IC	1	
IC108	C0JBAA000115	IC	1	
IC109	C0JBAZ000853	IC	1	
IC201	C3ABMG000160	IC	1	
IC202	C0JBAA000148	IC	1	
IC203	TC7SU04FT85L	IC	1	C0JBAZ000519
IC204	C2HBZA000009	DSP IC	1	
IC205	BA10393F-E2	IC	1	C0BBBB000014
IC206	C0EBD0000141	IC	1	
IC207	PCM1716ET2	IC	1	C0FBBK000007
IC208	PCM1800E-T1	IC	1	C0FBAJ000004
IC209,10	M5218AFPE3	IC	2	C0ABBB000163
IC211	C1BB00000637	IC	1	
IC301	C1BB00000709	TONE GENERATOR	1	
IC302	C3ZBP0000007	IC	1	
IC303	C3ZBP0000008	IC	1	
JP102	ERJ3GEY0R00V	0	1	
JP201	ERJ3GEY0R00V	0	1	
L201,02	G1C101K00032	COIL	2	
Q1	2SB0709ARL	TRANSISTOR	1	
Q2	2SD0601AQL	TRANSISTOR	1	
Q103	UN511NTX	TRANSISTOR	1	UNR511N00L
Q104	UN5216	TRANSISTOR	1	UNR521600L
Q106	2SB0709ARL	TRANSISTOR	1	
Q107	2SD0601AQL	TRANSISTOR	1	
Q108	2SB0709ARL	TRANSISTOR	1	
Q201	2SD0601AQL	TRANSISTOR	1	
Q202	2SB14400RL	TRANSISTOR	1	
Q203	2SB970-Q	TRANSISTOR	1	2SB09700Q
Q204	2SD21850HL	TRANSISTOR	1	
Q205	2SD0601AQL	TRANSISTOR	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
Q206	2SB0709ARL	TRANSISTOR	1	
Q207	2SD0601AQL	TRANSISTOR	1	
Q208	2SB0709ARL	TRANSISTOR	1	
Q209	2SB14400RL	TRANSISTOR	1	
Q210	2SD21850HL	TRANSISTOR	1	
Q211	2SD0601AQL	TRANSISTOR	1	
Q212	2SB0709ARL	TRANSISTOR	1	
R1,R2	ERJ3GEYJ101	100	2	D0GB101JA002
R3	ERJ3GEYJ102V	1K	1	
R4	ERJ3GEYJ472V	4.7K	1	
R5	ERJ3GEYJ104	100K	1	
R6	ERJ3GEYJ102V	1K	1	
R7	ERJ3GEYJ104	100K	1	
R8	ERJ3GEYJ472V	4.7K	1	
R10	ERJ3GEYJ103V	10K	1	D0GB103JA002
R12	ERJ3GEYJ472V	4.7K	1	
R13	ERJ3GEYJ470V	47	1	
R14	ERJ3GEY0R00V	0	1	
R15,16	ERJ3GEYJ470V	47	2	
R17	ERJ3GEY0R00V	0	1	
R19	ERJ3GEYJ472V	4.7K	1	
R21-23	ERJ3GEYJ470V	47	3	
R24	ERJ3GEYJ101	100	1	D0GB101JA002
R25-27	ERJ3GEYJ472V	4.7K	3	
R28	ERJ3GEYJ471V	470	1	
R30-34	ERJ3GEYJ472V	4.7K	5	
R35	ERJ3GEYJ470V	47	1	
R36,37	ERJ3GEYJ472V	4.7K	2	
R38	ERJ3GEYJ330V	33	1	D0GB330JA002
R39,40	ERJ3GEYJ470V	47	2	
R42	ERJ3GEYJ331V	330	1	
R43,44	ERJ3GEY0R00V	0	2	
R45	ERJ3GEYJ332V	3.3K	1	D0GB332JA002
R46,47	ERJ3GEYJ472V	4.7K	2	
R48	ERJ3GEYJ222V	2.2K	1	D0GB222JA002
R101-03	ERJ3GEYJ470V	47	3	
R104	ERJ3GEYJ102V	1K	1	
R105	ERJ3GEYJ105V	1M	1	
R107	ERJ3GEYJ470V	47	1	
R108	ERJ3GEYJ221V	220	1	
R109	ERJ3GEYJ105V	1M	1	
R110-13	ERJ3GEYJ331V	330	4	
R114	ERJ3GEYJ223V	22K	1	D0GB223JA002
R117	ERJ3GEYJ124V	120K	1	D0GB124JA002
R119	ERJ3GEYJ101	100	1	D0GB101JA002
R120,21	ERJ3GEYJ470V	47	2	
R122,23	ERJ3GEYJ472V	4.7K	2	
R124	ERJ3GEYJ103V	10K	1	D0GB103JA002
R125	ERJ3GEYJ101	100	1	D0GB101JA002
R126-28	ERJ3GEYJ472V	4.7K	3	
R129	ERJ3GEYJ470V	47	1	
R130	ERJ3GEY0R00V	0	1	
R132	ERJ3GEYJ472V	4.7K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R134,35	ERJ3GEYJ472V	4.7K	2	
R137	ERJ3GEYJ472V	4.7K	1	
R139	ERJ3GEYJ222V	2.2K	1	D0GB222JA002
R140	ERJ3GEYJ103V	10K	1	D0GB103JA002
R141	ERJ3GEYJ223V	22K	1	D0GB223JA002
R142	ERJ3GEYJ473V	47K	1	D0GB473JA002
R143	ERJ3GEYJ222V	2.2K	1	D0GB222JA002
R144	ERJ3GEYJ331V	330	1	
R145	ERJ3GEYJ472V	4.7K	1	
R201-04	ERJ3GEYJ221V	220	4	
R205	ERJ3GEYJ105V	1M	1	
R206,07	ERJ3GEYJ101	100	2	D0GB101JA002
R209-11	ERJ3GEYJ221V	220	3	
R212	ERJ3GEYJ102V	1K	1	
R214	ERJ3GEYJ471V	470	1	
R215	ERJ3GEYJ151V	150	1	
R216	ERJ3GEYJ102V	1K	1	
R217	ERJ3GEYJ471V	470	1	
R218	ERJ3GEYJ680	68	1	ERJ3GEYJ680V
R219	ERJ3GEYJ151V	150	1	
R220	ERJ3GEYJ221V	220	1	
R221	ERJ3GEYJ103V	10K	1	D0GB103JA002
R222	ERJ3GEYJ472V	4.7K	1	
R223	ERJ3GEYJ334V	330K	1	
R224	ERJ3GEYJ222V	2.2K	1	D0GB222JA002
R225,26	ERJ3GEYJ471V	470	2	
R227	ERJ1WRQJR33U	1W 0.33	1	
R228	ERJ3GEYJ331V	330	1	
R229	ERJ3GEYJ101	100	1	D0GB101JA002
R230	ERJ3GEYJ681V	680	1	D0GB681JA002
R231,32	ERJ3GEYJ473V	47K	2	D0GB473JA002
R233,34	ERJ3GEYJ471V	470	2	
R235,36	ERJ3GEYJ151V	150	2	
R238,39	ERJ3GEYJ103V	10K	2	D0GB103JA002
R240,41	ERJ3GEYJ151V	150	2	
R242	ERJ3GEYJ220V	22	1	
R243	ERJ3GEYJ221V	220	1	
R244	ERJ3GEYJ472V	4.7K	1	
R245	ERJ3GEYJ102V	1K	1	
R246	ERJ3GEYJ224V	220K	1	D0GB224JA002
R247,48	ERJ3GEYJ104	100K	2	
R251	ERJ3GEYJ682V	6.8K	1	D0GB682JA002
R252	ERJ3GEYJ471V	470	1	
R253	ERJ3GEYJ152V	1.5K	1	
R254	ERJ1WRQJR33U	1W 0.33	1	
R255,56	ERJ3GEYJ331V	330	2	
R257	ERJ3GEYJ102V	1K	1	
R258,59	ERJ3GEYJ473V	47K	2	D0GB473JA002
R260	ERJ3GEYJ104	100K	1	
R262	ERJ3GEYJ104	100K	1	
R267	ERJ3GEYJ104	100K	1	
R269	ERJ3GEYJ104	100K	1	
R273	ERJ3GEYJ472V	4.7K	1	
R275	ERJ3GEYJ472V	4.7K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R276,77	ERJ3GEYJ102V	1K	2	
R301	ERJ3GEYJ105V	1M	1	
R302-06	ERJ3GEYJ470V	47	5	
R307	ERJ3GEYJ472V	4.7K	1	
R308	ERJ3GEYJ221V	220	1	
R309,10	ERJ3GEYJ470V	47	2	
R311	ERJ3GEYJ221V	220	1	
R312	ERJ3GEYJ470V	47	1	
R313-19	ERJ3GEYJ221V	220	7	
R321-26	ERJ3GEYJ221V	220	6	
R328,29	ERJ3GEYJ221V	220	2	
R330,31	ERJ3GEYJ103V	10K	2	D0GB103JA002
X1	H0J800400015	OSCILATOR	1	
X101	H0J240500016	24MHZ OSCILATOR	1	
X201	H0J250500016	25MHZ OSCILATOR	1	
X301	H0J169300002	OSCILATOR	1	
Z1,Z2	EXBV8V472JV	4.7K*4	2	
Z3	EXBV8V470JV	47*4	1	
Z4-12	EXBV8V472JV	4.7K*4	9	
Z13	EXBV8V101JV	100*4	1	
Z14-23	EXBV8V472JV	4.7K*4	10	
Z101,02	EXBV8V470JV	47*4	2	
Z103	EXBV8V102JV	1K*4	1	
Z104	EXBV8V221JV	220*4	1	
Z105,06	EXBV8V472JV	4.7K*4	2	
Z107,08	EXBV8V101JV	100*4	2	
Z109	EXBV8V470JV	47*4	1	
Z110,11	EXBV8V472JV	4.7K*4	2	
Z112	EXBV8V473JV	47K*4	1	
Z201,02	EXBV8V472JV	4.7K*4	2	
Z203	EXBV8V101JV	100*4	1	
Z204	EXBV8V470JV	47*4	1	
Z205	EXBV8V472JV	4.7K*4	1	
Z301,02	EXBV8V223JV	22K*4	2	
Z303-05	EXBV8V470JV	47*4	3	
Z306	EXBV8V101JV	100*4	1	
Z307,08	EXBV8V472JV	4.7K*4	2	
Z309-11	EXBV8V101JV	100*4	3	
Z312-21	EXBV8V221JV	220*4	10	
<AS P.C.B.>				
PCB2	SXPG2170421	AS P.C.B.	1	[RTL]
C7	ECQV1H104JM3	50V 0.1U	1	
C8	ECQB1H472JF3	0.0047U	1	
C10	ECQV1H104JM3	50V 0.1U	1	
C11	ECCR1H470J5	47P	1	
C12,13	ECQV1H104JM3	50V 0.1U	2	
C14	ECQB1H472JF3	0.0047U	1	
C16	ECCR1H470J5	47P	1	
C17	ECQB1H333JF3	0.033U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C18	ECQB1H223JF3	0.022U	1	
C19	ECQG1H102KZT	0.001	1	F0A1H102A025
C20	ECQB1H682JF3	50V 0.0068U	1	
C21	ECQG1H102KZT	0.001	1	F0A1H102A025
C22	ECQB1H682JF3	50V 0.0068U	1	
C23	ECQB1H333JF3	0.033U	1	
C24	ECQB1H223JF3	0.022U	1	
C25,26	ECCR1H100D5	50V 10P	2	
C29	ECA1VM472E	35V 4700	1	
C32	ECA1VM332	35V 3300U	1	
C36,37	ECRR1H104ZF1	0.1U	2	F1E1H1040023
C38	ECEA1CKS101	16V 100	1	
C39	ECA1CM331	16V 330	1	
C49	ECQV1H474JZ	0.47	1	
C50	ECQB1H223JF3	0.022U	1	
C51	ECQV1H104JM3	50V 0.1U	1	
C54	ECQV1H474JZ	0.47	1	
C55	ECQB1H223JF3	0.022U	1	
C56	ECQV1H104JM3	50V 0.1U	1	
C61,62	ECQV1H105JM3	1	2	
C91,92	F1D1H104A047	0.1	2	
CN1	QJTG01010AA	CONNECTOR(10P)	1	
CN4	SJPG1JS060A	CONNECTOR(6P)	1	
CN5	SJPG7JS030A	CONNECTOR(3P)	1	
CN6	QJTG01005AA	CONNECTOR(5P)	1	
CN9	SJPG1310A	CONNECTOR(4P)	1	
CN10	SJPG1320A	CONNECTOR(6P)	1	
D1,D2	ERA1502V5	DIODE	2	B0EAKM000061 ⚠
D4	SVDS3V40	DIODE	1	⚠
D6,D7	SVDS3V40	DIODE	2	⚠
D9	SVDS3V40	DIODE	1	⚠
D11,12	MA4180TA	DIODE	2	MAZ418000F
D15	MA165TA5	DIODE	1	MA2C16500E
D16	EK04W	DIODE	1	B0JAME000042
D19,20	MA29W-A	DIODE	2	MA2C029WA
D27,28	MA29W-A	DIODE	2	MA2C029WA
D33	EK04W	DIODE	1	B0JAME000042
F4,F5	XBA1C25NU100	FUSE 125V 2.5V	2	K5D252AB0002 ⚠
IC1	M5F78M15L	REGULATOR	1	C0CAALE00004 ⚠
IC2	M5F79M15L	REGULATOR	1	C0CABLE00002 ⚠
IC5-10	C0AABB000054	IC	6	
L1	QLQGT3T150SA	COIL	1	G0B150A00002
L4	QLQGT1B800MB	COIL	1	G0C800Z00002 ⚠
Q1	2SD0592ARA	TRANSISTOR	1	
Q2	2SB621A-R	TRANSISTOR	1	2SB0621AH

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
Q3	2SD0592ARA	TRANSISTOR	1	
Q4	2SB621A-R	TRANSISTOR	1	2SB0621AH
Q5,Q6	2SA1015TPE2	TRANSISTOR	2	B1ACCF000016
Q7	2SC1815TPE2	TRANSISTOR	1	B1AACF000023
Q11,12	2SC1815TPE2	TRANSISTOR	2	B1AACF000023
Q13	2SA1015TPE2	TRANSISTOR	1	B1ACCF000016
Q14	2SC1815TPE2	TRANSISTOR	1	B1AACF000023
Q15	2SA1015TPE2	TRANSISTOR	1	B1ACCF000016
Q16	B1BAEJ000008	TRANSISTOR	1	⚠
Q17	B1BCEJ000004	TRANSISTOR	1	⚠
Q18	2SC1815TPE2	TRANSISTOR	1	B1AACF000023
Q19	2SA1015TPE2	TRANSISTOR	1	B1ACCF000016
Q20	B1BAEJ000008	TRANSISTOR	1	⚠
Q21	B1BCEJ000004	TRANSISTOR	1	⚠
Q22	2SA1015TPE2	TRANSISTOR	1	B1ACCF000016
R9,10	ERDS2FJ103	10K	2	
R11	ERDS2TJ682	6.8K	1	
R12	ERDS2TJ272T	2.7K	1	
R13	ERDS2TJ682	6.8K	1	
R14	ERDS2FJ683	68K	1	
R15	ERDS2FJ333	33K	1	
R16	ERDS2FJ683	68K	1	
R18,19	ERDS2FJ473	47K	2	
R21	ERDS2FJ123	12K	1	
R22	ERDS2FJ223	22K	1	
R25,26	ERDS2FJ473	47K	2	
R27	ERDS2FJ333	33K	1	
R28	ERDS2TJ272T	2.7K	1	
R31	ERDS2FJ123	12K	1	
R32	ERDS2FJ223	22K	1	
R33	ERDS2FJ473	47K	1	
R34	ERDS2FJ103	10K	1	
R35	ERDS2FJ123	12K	1	
R36	ERDS2FJ473	47K	1	
R37	ERDS2FJ103	10K	1	
R38	ERDS2FJ123	12K	1	
R39	ERDS2FJ332	3.3K	1	
R41,42	ERDS2FJ334	330K	2	
R43	ERDS2FJ220	22	1	
R45	ERDS2FJ334	330K	1	
R46	ERDS2FJ220	22	1	
R47	ERDS2FJ334	330K	1	
R48,49	ERDS2FJ222	2.2K	2	
R50,51	ERD2FCG220	22 1/4W FUSE TYPE	2	⚠
R52,53	ERDS2FJ103	10K	2	
R54,55	ERQ14AJ2R0EP	2 1/4W	2	⚠
R56	ERD2FCJ6R8	1/4W 6.8 FUSE TYPE	1	⚠
R57	ERD2FCJ6R8P	6.8 1/4W FUSE TYPE	1	⚠
R58-60	ERDS2FJ103	10K	3	
R61,62	ERDS2FJ472	4.7K	2	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R78,79	ERDS2T0	0	2	
R80	ERDS2FJ103	10K	1	
R81	ERDS2FJ104	100K	1	
R83	ERDS2FJ103	10K	1	
R84	ERDS2FJ473	47K	1	
R85	ERDS2FJ332	3.3K	1	
R86	ERDS2FJ684	680K	1	
R89	ERDS2FJ103	10K	1	
R90	ERDS2FJ102	1K	1	
R91,92	ERDS2FJ222	2.2K	2	
R93	ER0S2TKF1691	1.69K	1	
R94,95	ER0S2CKF1001	1K	2	EROS2CKF1001
R96,97	ERD2FCG101	100 FUSE TYPE	2	⚠
R98,99	ERDS2FJ331	330	2	
R100	ERDS2FJ4R7	4.7	1	⚠
R101	ERDS2FJ684	680K	1	
R104	ERDS2FJ103	10K	1	
R105	ERDS2FJ102	1K	1	
R106,07	ERDS2FJ222	2.2K	2	
R108	ER0S2TKF1691	1.69K	1	
R109,10	ER0S2CKF1001	1K	2	EROS2CKF1001
R111	ERD2FCG101	100 FUSE TYPE	1	⚠
R112,13	ERDS2FJ331	330	2	
R114	ERD2FCG101	100 FUSE TYPE	1	⚠
R115	ERDS2FJ4R7	4.7	1	
R116,17	ERDS2FJ331	330	2	
R118	ERD2FCJ6R8	1/4W 6.8 FUSE TYPE	1	⚠
R201,02	ERDS2FJ4R7	4.7	2	⚠
<CPL P.C.B.>				
PCB3	SXPG226551A	CPL P.C.B.	1	[RTL]
C1	ECEA0JKS331	6.3V 330U	1	
C2	ECRR1H104ZF1	0.1U	1	F1E1H1040023
C3	ECBA1E223ZF5	25V 0.0022U	1	
C4	ECEA0JKS101	6V 100U	1	
C7,C8	F1D1H102A012	0.001U	2	
C9-11	ECRR1H104ZF1	0.1U	3	F1E1H1040023
CN1	SJPG2JS050A	CONNECTOR(5P)	1	
D1-D5	MA165TA5	DIODE	5	MA2C16500E
D7-14	MA165TA5	DIODE	8	MA2C16500E
D18-35	MA165TA5	DIODE	18	MA2C16500E
D41-56	MA165TA5	DIODE	16	MA2C16500E
D100-07	B3AAA0000471	LED	8	
D110,11	B3AAA0000471	LED	2	
D112	B3ABA0000360	LED	1	
D114	B3ABA0000360	LED	1	
D115,16	B3AAA0000471	LED	2	
D120-27	B3AAA0000471	LED	8	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
D130	B3ABA0000360	LED	1	
D131	B3AAA0000471	LED	1	
D132,33	B3ABA0000360	LED	2	
D135	B3ABA0000360	LED	1	
D136	B3AAA0000471	LED	1	
D137	B3ABA0000360	LED	1	
D140,41	B3AAA0000471	LED	2	
D142-44	B3ABA0000360	LED	3	
D149-54	B3AAA0000471	LED	6	
D155	B3ABA0000360	LED	1	
ESW1	QSRGT002AA	ENCODER SWITCH	1	K9AA015B0034
IC1	M37471M2196S	IC	1	C2BBDB000023
IC2	HD74LS07P	IC	1	C0JACB000006
Q1-Q6	2SA830STPB	TRANSISTOR	6	
Q7,Q8	2SB621A-R	TRANSISTOR	2	2SB0621AH
R2	ERDS2FJ103	10K	1	
R3	ERDS2T0	0	1	
R4	ERDS2FJ101	100	1	
R5	ERDS2FJ471	470	1	
R6,R7	ERDS2FJ221	220	2	
R8	ERDS2FJ471	470	1	
R9,10	ERDS2FJ103	10K	2	
R11,12	ERDS2FJ472	4.7K	2	
R13,14	ERDS2FJ473	47K	2	
R15,16	ERDS2FJ104	100K	2	
R17-24	ERDS2FJ103	10K	8	
R26-31	ERDS2FJ103	10K	6	
R32-37	ERDS2FJ101	100	6	
R38,39	ERDS2FJ680	68	2	
SW1-W5	EVQ21507K	PUSH SWITCH	5	
SW7-14	EVQ21507K	PUSH SWITCH	8	
SW18-35	EVQ21507K	PUSH SWITCH	18	
SW41-56	EVQ21507K	PUSH SWITCH	16	
VR1,R2	QRVG25N01B53	VOLUME 5K	2	D2B5A53B0001
X1	EF0MC4004T5	4MHZ CERAMIC OSCILATOR	1	
<CPR P.C.B.>				
PCB4	SXPG226551B	CPR P.C.B.	1	[RTL]
C1,C2	ECRR1H104ZF1	0.1U	2	F1E1H1040023
C4	ECEA0JKS470	6V 47U	1	
C5	ECBA1E223ZF5	25V 0.0022U	1	
CN1	SJPG2JS050A	CONNECTOR(5P)	1	
CN2	SJPG2JS040A	CONNECTOR(4P)	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
D1-D5	MA165TA5	DIODE	5	MA2C16500E
D9-15	MA165TA5	DIODE	7	MA2C16500E
D17-54	MA165TA5	DIODE	38	MA2C16500E
D57-72	MA165TA5	DIODE	16	MA2C16500E
D100-02	B3AAA0000471	LED	3	
D103-06	B3ABA0000360	LED	4	
D107	B3AAA0000471	LED	1	
D110-13	B3AAA0000471	LED	4	
D114	B3ABA0000360	LED	1	
D116,17	B3AAA0000471	LED	2	
D120-26	B3AAA0000471	LED	7	
D127	B3ABA0000360	LED	1	
D130-37	B3AAA0000471	LED	8	
D140-44	B3ABA0000360	LED	5	
D145	B3AAA0000471	LED	1	
D148-54	B3AAA0000471	LED	7	
IC1	M37471M2196S	IC	1	C2BBDB000023
IC2	HD74LS07P	IC	1	C0JACB000006
Q1-Q6	2SA830STPB	TRANSISTOR	6	
Q7-Q9	2SB621A-R	TRANSISTOR	3	2SB0621AH
R1-R6	ERDS2FJ101	100	6	
R7-R9	ERDS2FJ680	68	3	
R12-25	ERDS2FJ103	10K	14	
R27	ERDS2T0	0	1	
R28	ERDS2FJ103	10K	1	
R29	ERDS2FJ471	470	1	
R30,31	ERDS2FJ221	220	2	
R32	ERDS2FJ471	470	1	
R34,35	ERDS2FJ103	10K	2	
SW1-W5	EVQ21507K	PUSH SWITCH	5	
SW9-15	EVQ21507K	PUSH SWITCH	7	
SW17-54	EVQ21507K	PUSH SWITCH	38	
SW57-72	EVQ21507K	PUSH SWITCH	16	
X1	EFOEC4004T3	4MHZ CERAMIC OSCILATOR	1	
<MKB1 P.C.B.>				
PCB5	SXPG231111A	MKB1 P.C.B.	1	[RTL]
C1	ECRR1H104ZF1	0.1U	1	F1E1H1040023
C4	ECEA0JKS470	6V 47U	1	
C6	ECRR1H104ZF1	0.1U	1	F1E1H1040023
CN3	SJPG1JS160A	CONNECTOR(16P)	1	
CN8	QJUG00212AA	CONNECTOR(12P)	1	
CN9	QJUG01408AA	CONNECTOR(8P)	1	
D1-88	MA165TA5	DIODE	88	MA2C16500E

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
IC1	C0JAAN000078	IC	1	
<MKB2 P.C.B.>				
PCB6	SXPG231111B	MKB2 P.C.B.	1	[RTL]
C5	ECRR1H104ZF1	0.1U	1	F1E1H1040023
C7	ECRR1H104ZF1	0.1U	1	F1E1H1040023
CN4	QJTG01812AA	CONNECTOR(12P)	1	
CN7	QEUGQ8H08BCZ	WIRE	1	
D89-76	MA165TA5	DIODE	88	MA2C16500E
IC2,C3	C0JAAN000078	IC	2	
<PKB P.C.B.>				
PCB7	SXPG218221	PKB P.C.B.	1	[RTL]
C1	ECRR1H104ZF	50V 0.1U	1	
CN1	QJTG016050AA	CONNECTOR(5P)	1	
JR1-R3	ERDS2T0A	0	3	
R8-10	ERDS2FJ472	4.7K	3	
SW1-W3	QSTGT001AA	LEVER SWITCH	3	K0D112A00015
<JACK P.C.B.>				
PCB8	SXPG239931C	JACK P.C.B.	1	[RTL]
C2	ECKR1E473ZV	0.047U	1	
C4	ECCR1H221J5	220P	1	
C5,C6	ECRR1H104ZF1	0.1U	2	F1E1H1040023
C7-C9	ERDS2FJ103	10K	3	
C10	ECRR1H104ZF1	0.1U	1	F1E1H1040023
C11,12	ECQG1H222KZT	2200P	2	F0A1H222A025
C14	F1B2E4720001	250V 4700P	1	⚠
C15,16	ECQG1H222KZT	2200P	2	F0A1H222A025
C18	ECQU2A104MN	100V 0.1U	1	⚠
C19-21	ECRR1H104ZF1	0.1U	3	F1E1H1040023
CN2	SJPG1JS140A	CONNECTOR(14P)	1	
CN3	SJPG7JS020A	CONNECTOR(2P)	1	
CN4	SJPG1JS080A	CONNECTOR(8P)	1	
CN5	SJPG7JS040A	CONNECTOR(4P)	1	
D1	MA165TA5	DIODE	1	MA2C16500E
D4,D5	MA165TA5	DIODE	2	MA2C16500E

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
F1	XBA1C40NB100	FUSE,4A 125V	1	⚠
IC1	SVIGTLP513	PHOTO COUPLER	1	
JK1	VJJ0544	PEDAL IN	1	K1CB104B0017
JK3,K4	K1CB103B0008	MIDI	2	
JK6	SJSD16-1	AC IN	1	K2AB2K000003 ⚠
JK7	K2HB102J0037	LINE OUT L	1	
JK8	K2HB102J0037	LINE OUT R/R+L	1	
JK9	K2HB102J0037	AUX L	1	
JK10	K2HB102J0037	AUX R/R+L	1	
L2,L3	QLQGT3T131TA	COIL	2	G0B131Z00001
L6,L7	QLQGT3T131TA	COIL	2	G0B131Z00001
L11,12	QLQGT3T131TA	COIL	2	G0B131Z00001
L14	QLQGT2T100SA	COIL	1	G0B100Z00001 ⚠
R1	ERDS2FJ221	220	1	
R4	ERDS2FJ151	150	1	
R5	ERDS2FJ330	33	1	
R6-R8	ERDS2FJ472	4.7K	3	
R9	ERDS2FJ331	330	1	
R10,11	ERDS2FJ681	680	2	
R12	ERDS2T0	0	1	
<INV P.C.B.>				
PCB9	SXPG226551C	INV P.C.B.	1	[RTL]
C1	ECEA0JKS101	6V 100U	1	
C2	ECRR1H104ZF1	0.1U	1	F1E1H1040023
C4	ECCW3F180JGE	18P	1	
C5	ECHS1473JZ	0.047U	1	
CN1	QJTG03004BA	CONNECTOR(2P)	1	
CN2	SJPG1JS040A	CONNECTOR(4P)	1	
L1	G0C101K00030	COIL	1	
Q1,Q2	2SD0592ARA	TRANSISTOR	2	
R1,R2	ERDS2FJ222	2.2K	2	
T1	QTDG003A	TRANSFORMER	1	G4D1A0000034
<HP MIC P.C.B.>				
PCB10	SXPG239901D	HP MIC P.C.B.	1	[RTL]
C1,C2	QCBG1H473ZFA	0.047U	2	F1E1H473A001
C3	F1E1H104A001	0.1U	1	
C4	ECEA1HSN010	50V 1U	1	
C5	ECBT1H470J3	47U	1	

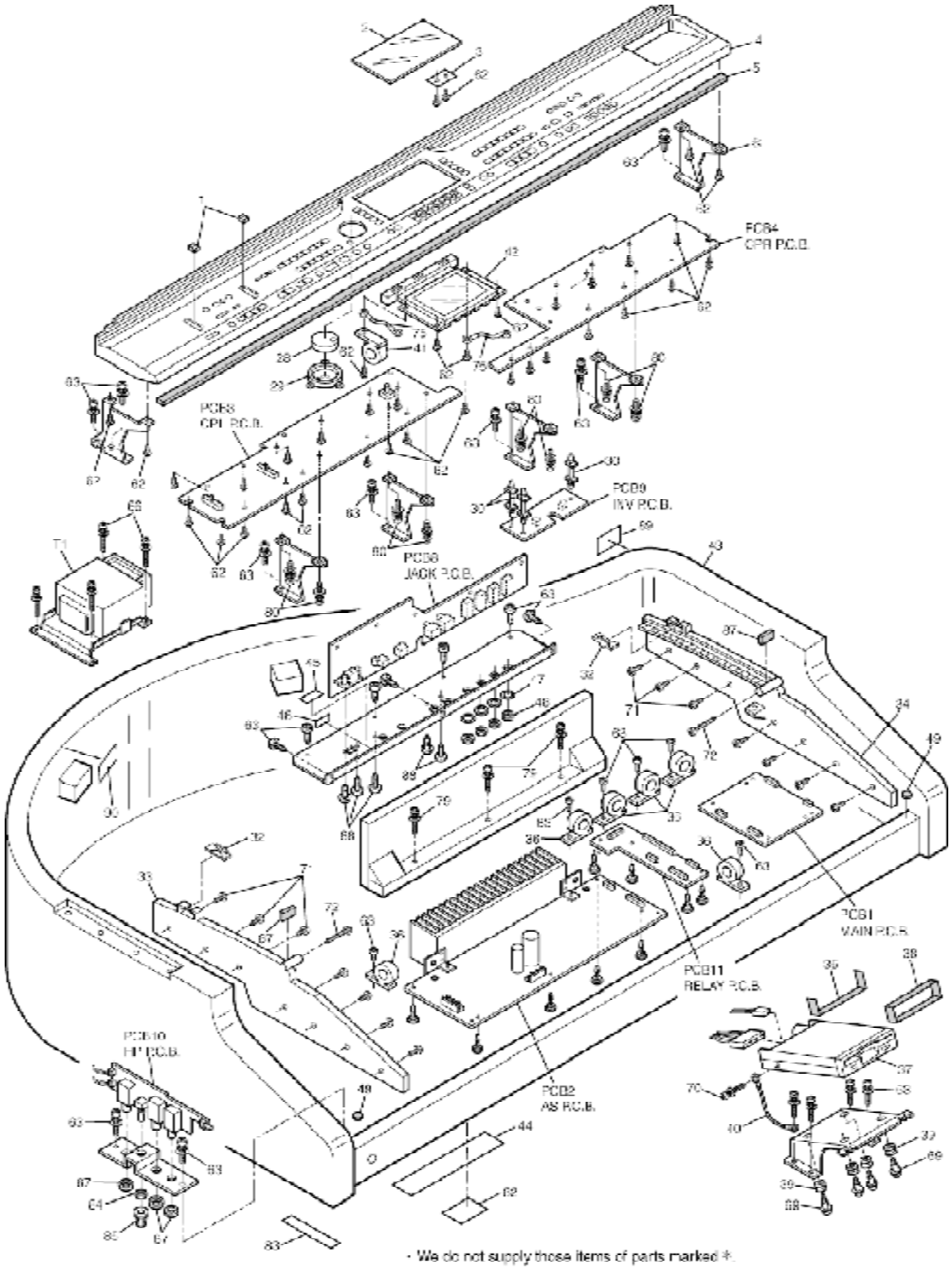
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C6	F1E1H104A001	0.1U	1	
C7	ECEA1HSN010	50V 1U	1	
C8	ECEA0JKS470	6V 47U	1	
C9	ECBT1C682MR5	0.0068U	1	F1D1C682A002
C10	F1E1H104A001	0.1U	1	
C11	ECEA1HSN010	50V 1U	1	
C12	F1E1H104A001	0.1U	1	
C13	F1D1H471A012	470P	1	
CN1	QJUG00703AA	CONNECTOR(3P)	1	
CN2	SJPG2JS060A	CONNECTOR(6P)	1	
CN3	SJPG2JS050A	CONNECTOR(5P)	1	
D1	MA165TA5	DIODE	1	MA2C16500E
D2	SEL4214RLC05	LED	1	
IC1	C0AABB000054	IC	1	
JK1,K2	QJJG010AA	JACK(HEADPHONE)	2	
JK3	QJJG011AA	JACK(MIC)	1	
L1,L2	QLQGT3T131TA	COIL	2	G0B131Z00001
Q1	B1AACF000068	TRANSISTOR	1	
R1-R4	ERG1SJ470	1W 47	4	⚠
R5	ERDS2FJ104	100K	1	
R6	ERDS2FJ472	4.7K	1	
R7	ERDS2FJ222	2.2K	1	
R8	ERDS2FJ104	100K	1	
R9	ERDS2FJ103	10K	1	
R10	ERDS2FJ683	68K	1	
R11	ERDS2FJ221	220	1	
R12	ERDS2FJ332	3.3K	1	
R13	ERDS2FJ102	1K	1	
VR1	QRVG09A02B54	MIC VOLUME	1	D2BDB54B0002
<RELAY P.C.B.>				
PCB11	SXPG239901G	RELAY P.C.B.	1	[RTL]
C601,02	ECEA1HSN010	50V 1U	2	
C603,04	F1D1H221A012	220P	2	
C607	EECS5R5V105	5.5V 1U	1	
C608,09	QCBG1H473ZFA	0.047U	2	F1E1H473A001
C612	QCBG1H473ZFA	0.047U	1	F1E1H473A001
C613	ECEA1VU470	35V 47U	1	
CN601	RJS2A5630	CONNECTOR(30P)	1	K1MN30A00038
CN603	QJUG00205AA	CONNECTOR(5P)	1	
CN604	SJPG1JS050A	CONNECTOR(5P)	1	
CN605	SJPG1JS080A	CONNECTOR(8P)	1	
CN606	QJUG00210AA	CONNECTOR(10P)	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
D601	MA2062LF	DIODE	1	MAZ2062000LF
D602	MA2051LF	DIODE	1	MAZ2051000LF
FP601	K5G102AA0003	FUSE	1	
IC601	C0AABB000054	IC	1	
R601,02	ERDS2FJ153	15K	2	
R603	ERDS2TJ392	3.9K	1	
R604	ERDS2FJ332	3.3K	1	
R605	ERDS2TJ392	3.9K	1	
R606	ERDS2FJ332	3.3K	1	
R607	ERDS2FJ563	56K	1	
R608,09	ERDS2FJ223	22K	2	
R610	ERDS2FJ563	56K	1	
R611	ERD2FCJ6R8	1/4W 6.8 FUSE TYPE	1	⚠

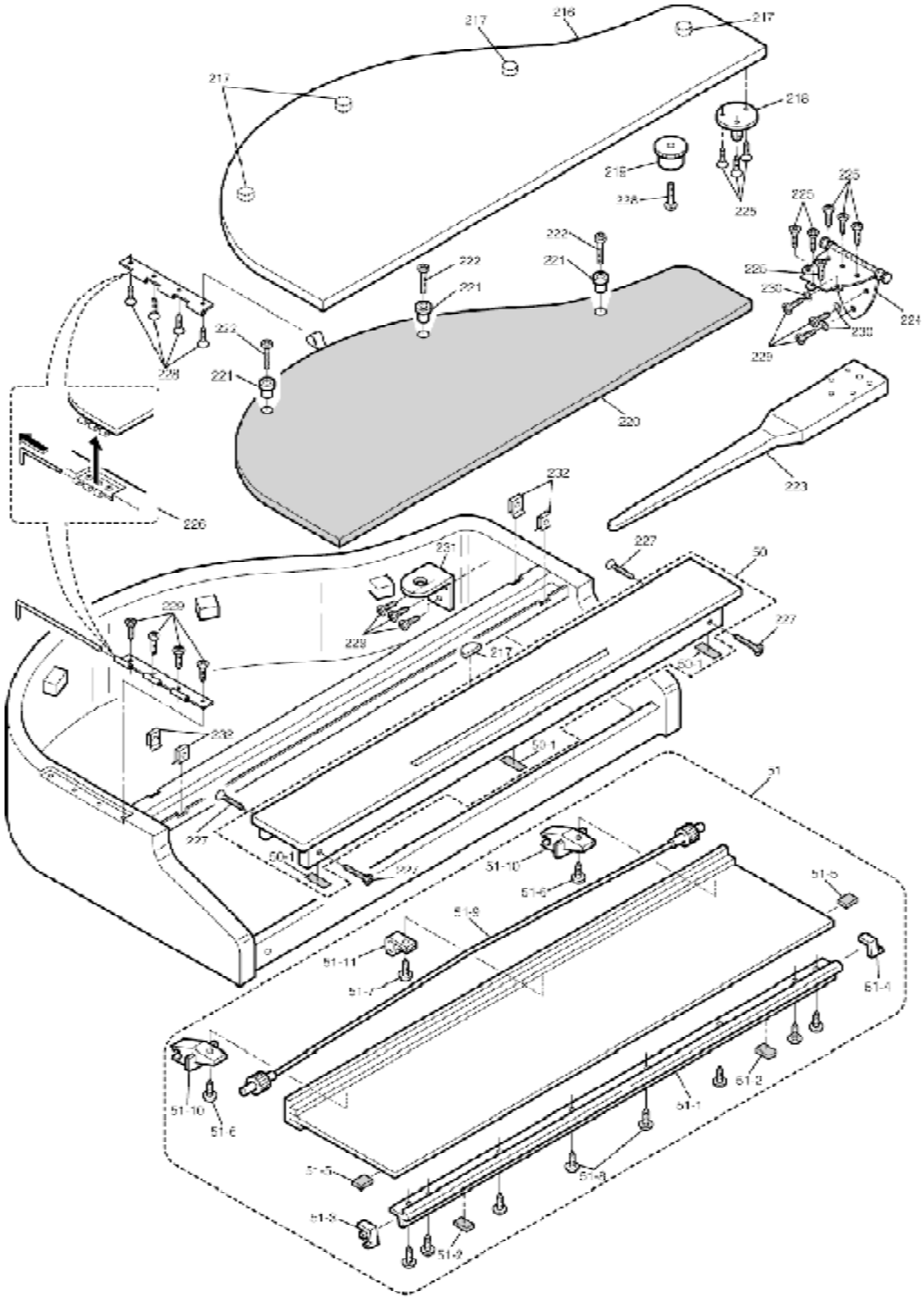
Notes:

***1: Since SW consists of buttons and P.C.B.s, we do not supply it as an individual part (refer to "Cabinet parts location " on the next page).**

17. Cabinet parts location



* We do not supply those items of parts marked *.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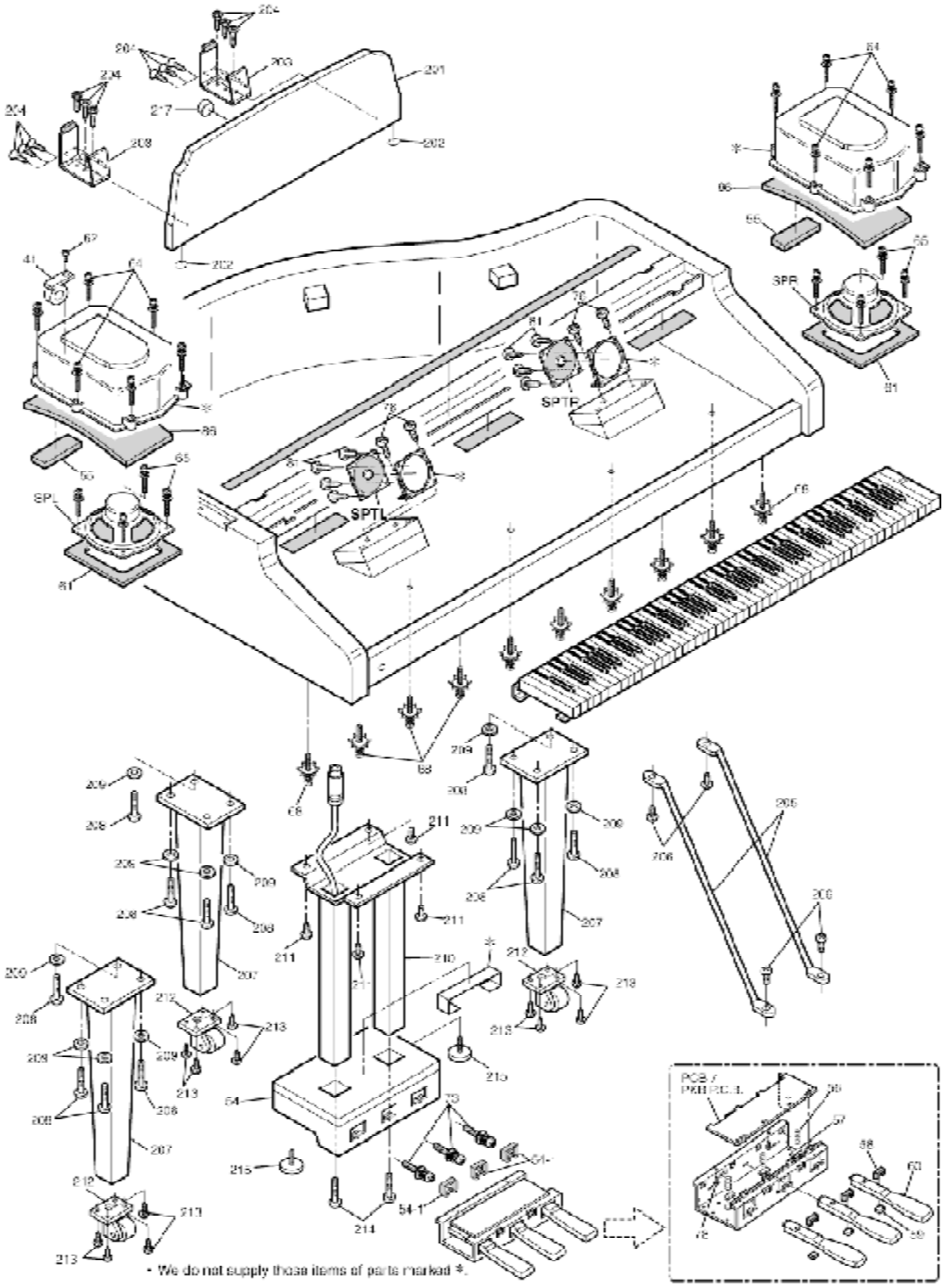
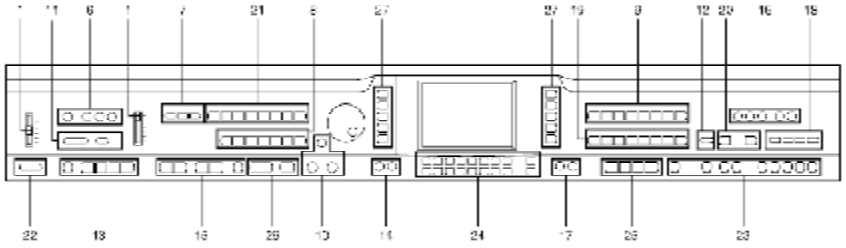
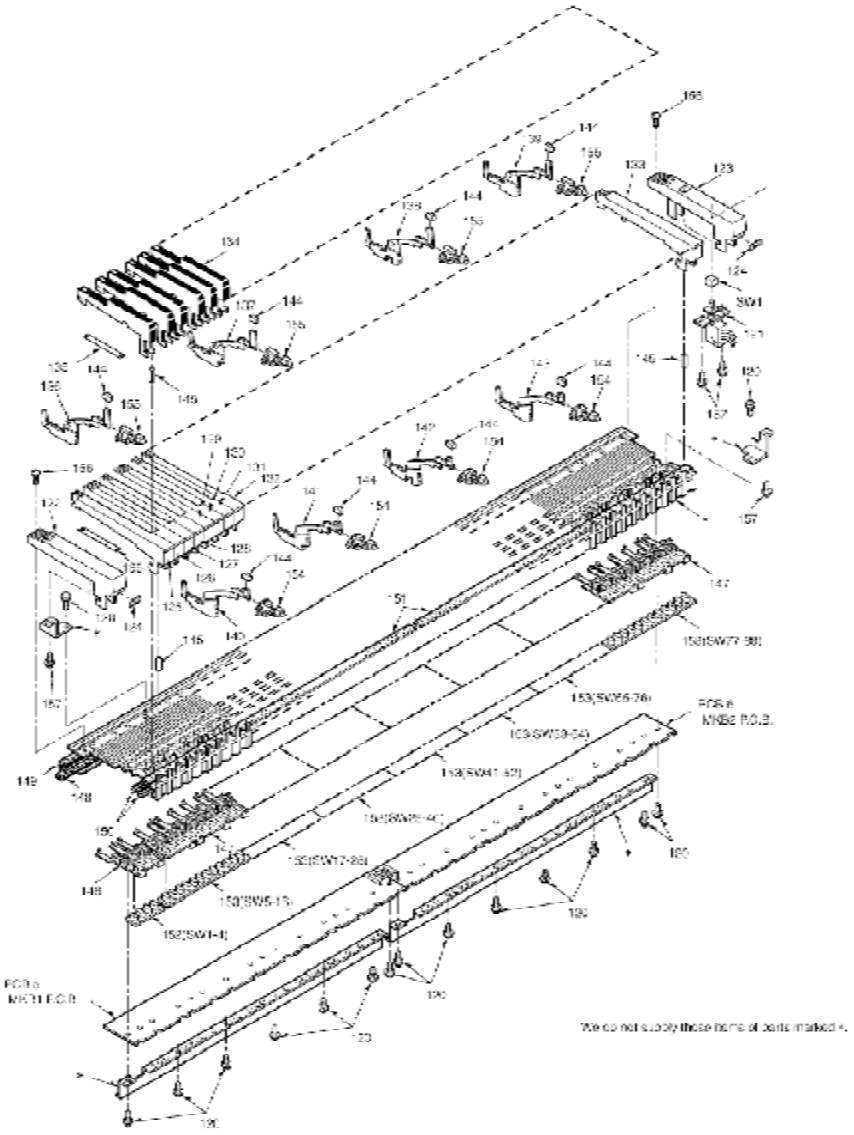
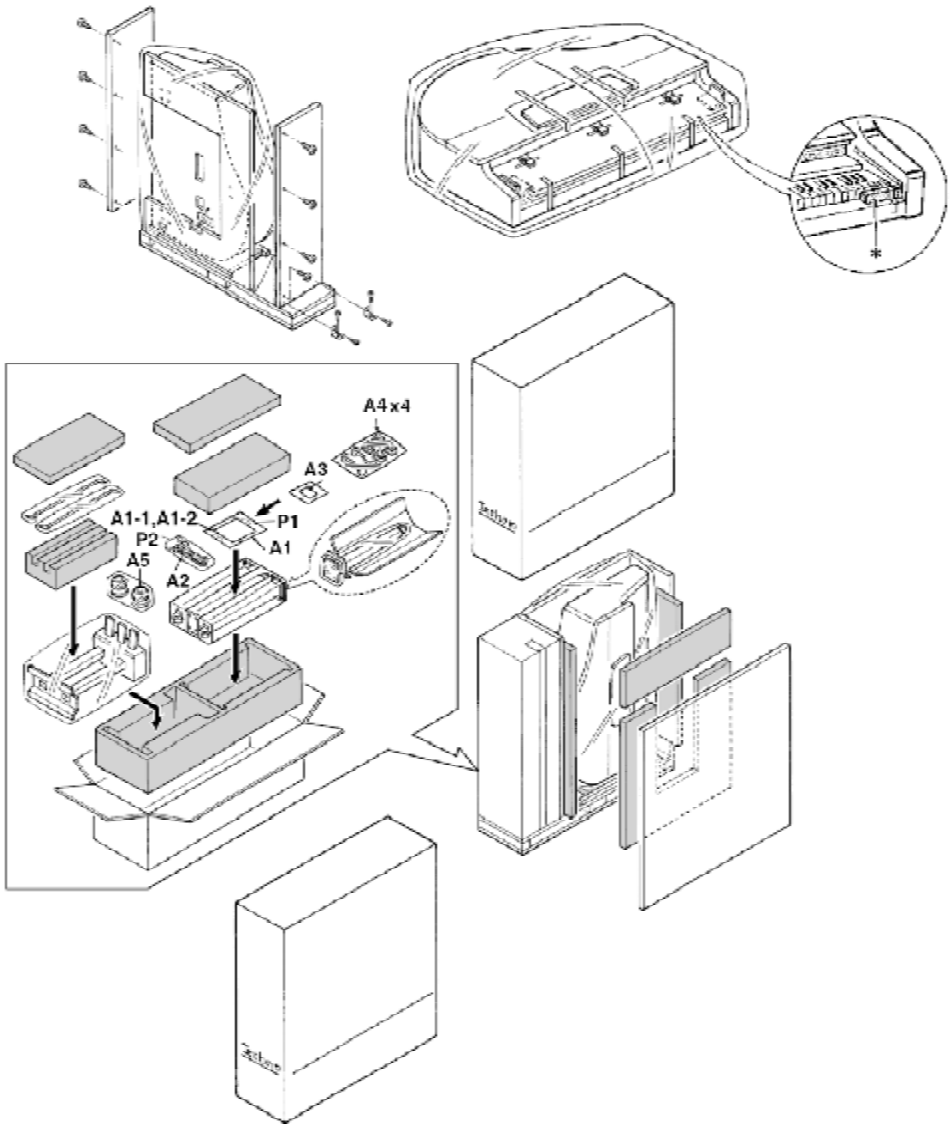


* We do not supply those items of parts marked *.





18. Packaging



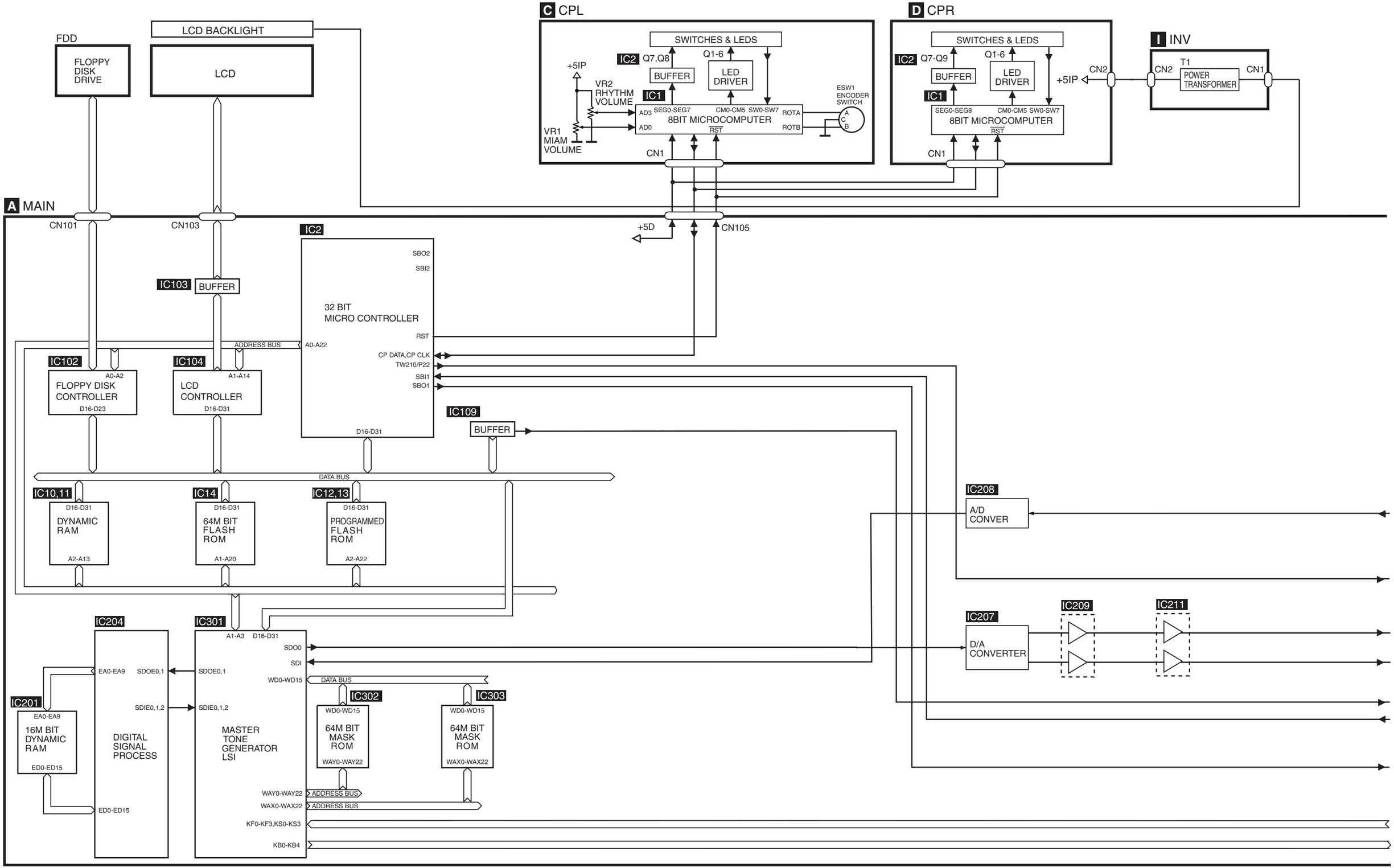
19. Schematic Diagram for printing with A4

/ Printed in Japan / S030900000 HM/AM

Digital Ensemble [SX-PR950]

Function		Transmitted	Recognized	Remarks
Basic Channel	Default	1-16	1-16	Assigned to the part.
	Changed	1-16	1-16	
Mode	Default	3	Mode 3	OMNI OFF, POLY MODE
	Messages	Mode 3, 4 (M=1)	Mode 3, 4 (M=1)	* M=1 only
	Altered	—	—	
Note Number		0-127	0-127	
	True voice	—	-	
Velocity	Note ON	○	○	
	Note OFF	×	×	
After Touch	Key's	×	×	
	Ch's	○ × *	○ × *	
Pitch Bend		○ × *	○ × *	
Control Change	0,32	○ × *	○ × *	Bank Select MSB, LSB
	1	○ × *	○ × *	Modulation
	5	○	○	Portamento time
	6,38	○ × *	○ × *	Data entry MSB, LSB
	7	○ × *	○ × *	Volume
	10	○ × *	○ × *	Panpot
	11	○ × *	○ × *	Expression
	12,13	○ × *	○ × *	Sound DSP
	64	○ × *	○ × *	Sustain
	65	○	○	Portamento on / off
	66	○	○	Sostenuto
	67	○	○	Soft Pedal
	71~78	○ × *	○ × *	Sound controllers
	80~83	○	○	Part Equalizer
	91~95	○ × *	○ × *	Effect 1~5 Depth
	98,99	○ × *	○ × *	NRPN
	100,101	○ × *	○ × *	RPN
Prog Change		○ × *	○ × *	
	True #	—	0-127	
System exclusive		○ × *	○ × *	
System common	Song Pos	○ × *	○ × *	
	Song Sel	○ × *	○ × *	
	Tune	×	×	
System Real Time	Clock	○ × *	○ × *	
	Commands	○ × *	○ × *	Start / Stop, continue
Aux Messages	Local ON / OFF	×	×	
	All notes OFF	×	○	
	Active Sense	○	○	
	Reset	×	×	
Notes		○ × * ····· Whether or not the data for each of these items is transmitted / received can be set.		

Mode 1: OMNI ON, POLY Mode 2: OMNI ON, MONO ○: Yes
Mode 3: OMNI OFF, POLY Mode 4: OMNI OFF, MONO ×: No



SX-PR950 BLOCK DIAGRAM

E MKB1

F MKB2

CN8

CN4

IC1

DECODER

SWITCHES & DIODES

IC2

DECODER

IC3

DECODER

K80-KB4

KF0-KF3,KS0-KS3

CN9

CN7

SWITCHES & DIODES

CN3

CN302

K RELAY

FP601

CN603

CN606

CN601

CN201

Q283

+5A

+5A REGULATOR

+VCC

+VOP

-VOP

Q289

+5D

D284

D285

+5D REGULATOR

+3.3D

Q282

+3.3D REGULATOR

IC206

Q206

MEMORY BACK UP

+3.3B

D206

+3.3D

D207

D209

+5D

IC601A

IC601B

CN604

CN605

H JACK (1/2)

CN4

JK7

LINE OUT L

JK8

LINE OUT R/R+L

JK9

AUX L

JK10

AUX R/R+L

CN107

CN2

JK1

PEDAL IN

JK3

MIDI OUT

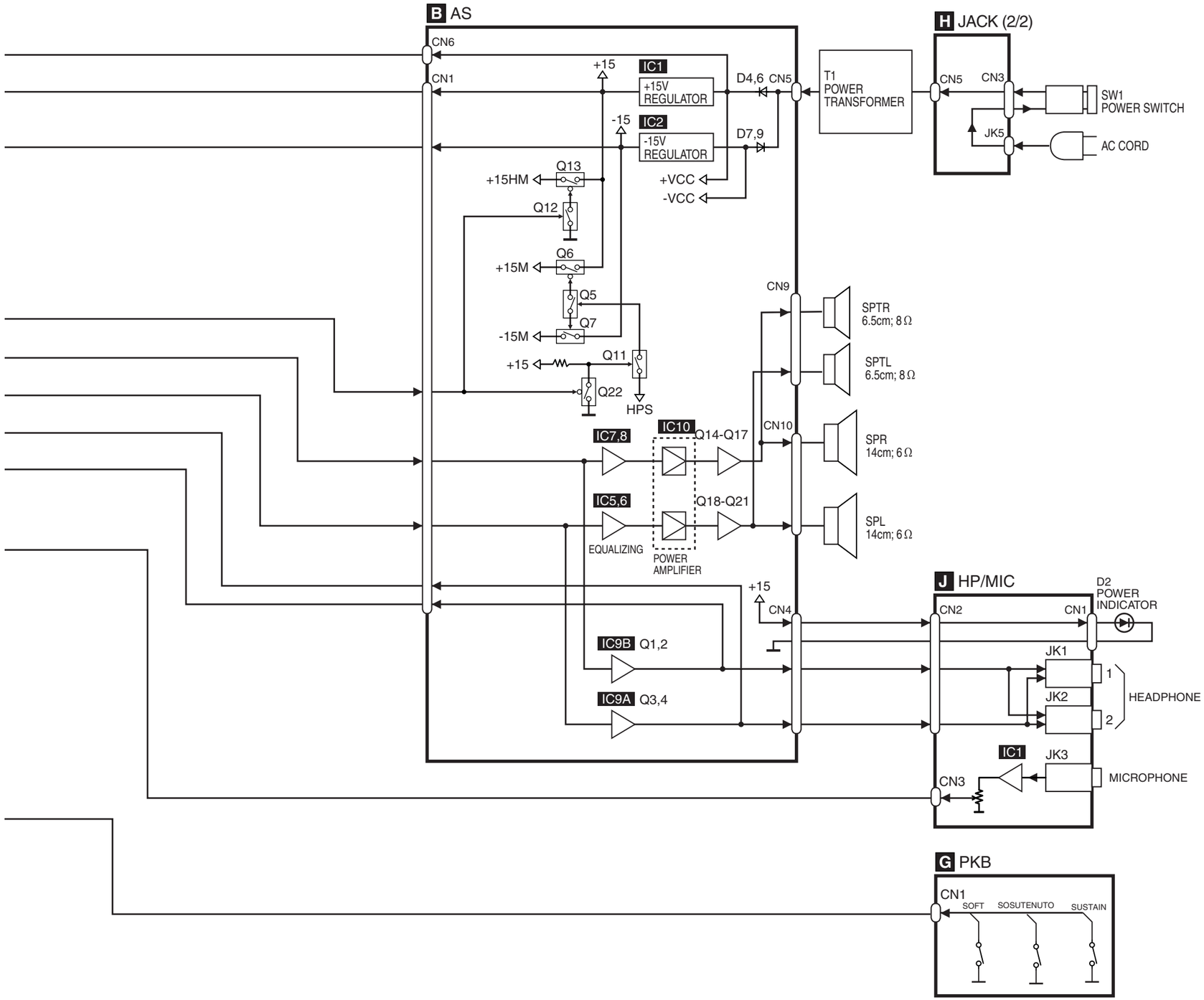
IC1

PHOTO COUPLER

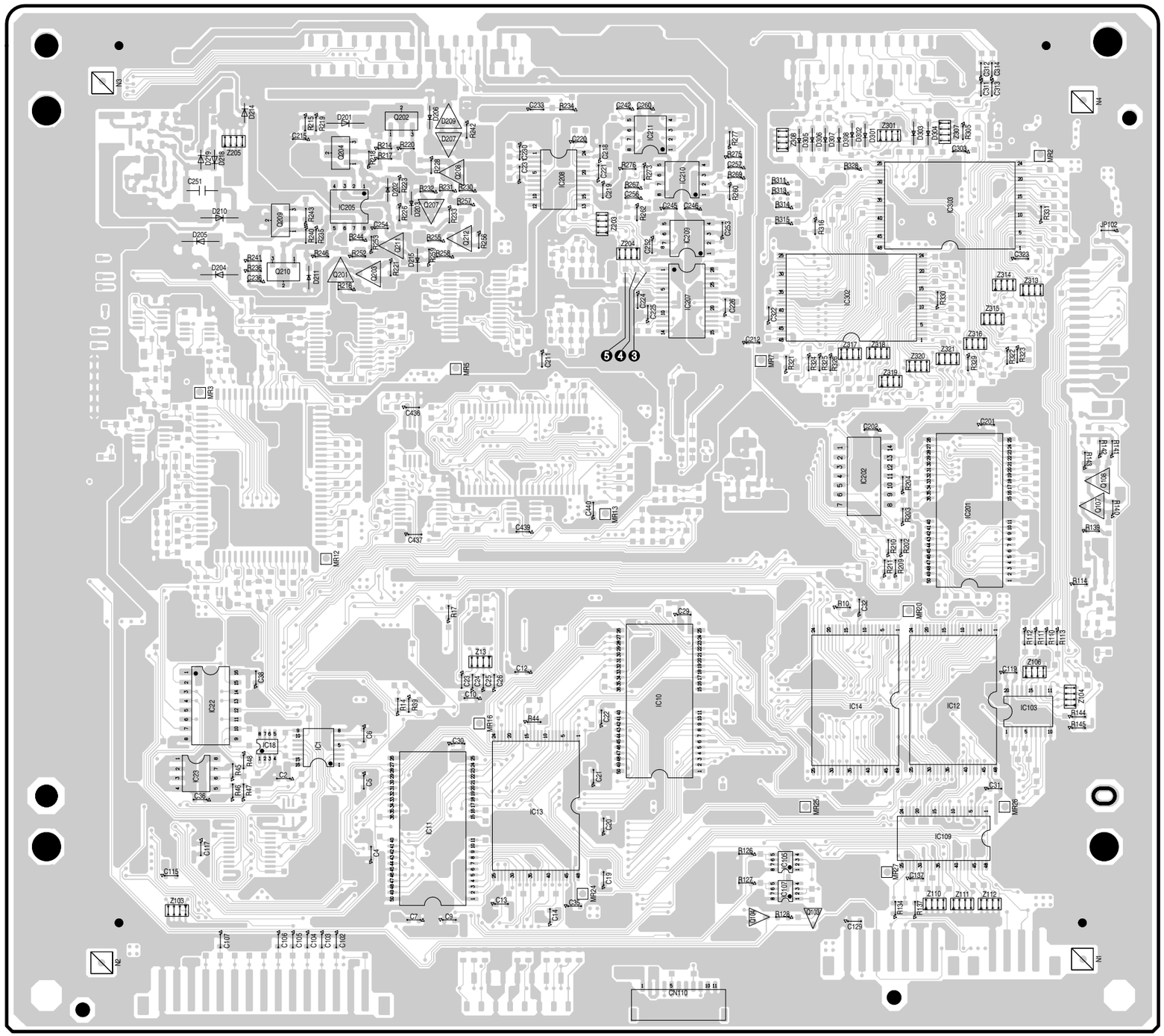
JK4

MIDI IN

SX-PR950 BLOCK DIAGRAM


B AS
CN6
CN1
+15
IC1
+15V REGULATOR
D4,6
CN5
T1 POWER TRANSFORMER
H JACK (2/2)
CN5
CN3
SW1 POWER SWITCH
JK5
AC CORD
-15
IC2
-15V REGULATOR
D7,9
+VCC
-VCC
Q13
+15HM
Q12
Q6
+15M
Q5
Q7
-15M
+15
Q11
Q22
HPS
CN9
SPTR 6.5cm; 8Ω
SPTL 6.5cm; 8Ω
IC7,8
IC10
Q14-Q17
CN10
SPR 14cm; 6Ω
IC5,6
Q18-Q21
SPL 14cm; 6Ω
EQUALIZING
POWER AMPLIFIER
+15
CN4
J HP/MIC
D2 POWER INDICATOR
CN2
CN1
JK1
1
JK2
2
HEADPHONE
IC9B Q1,2
IC9A Q3,4
IC1
JK3
CN3
MICROPHONE
G PKB
CN1
SOFT
SOSUTENUTO
SUSTAIN

A MAIN P.C.B. (A SIDE)

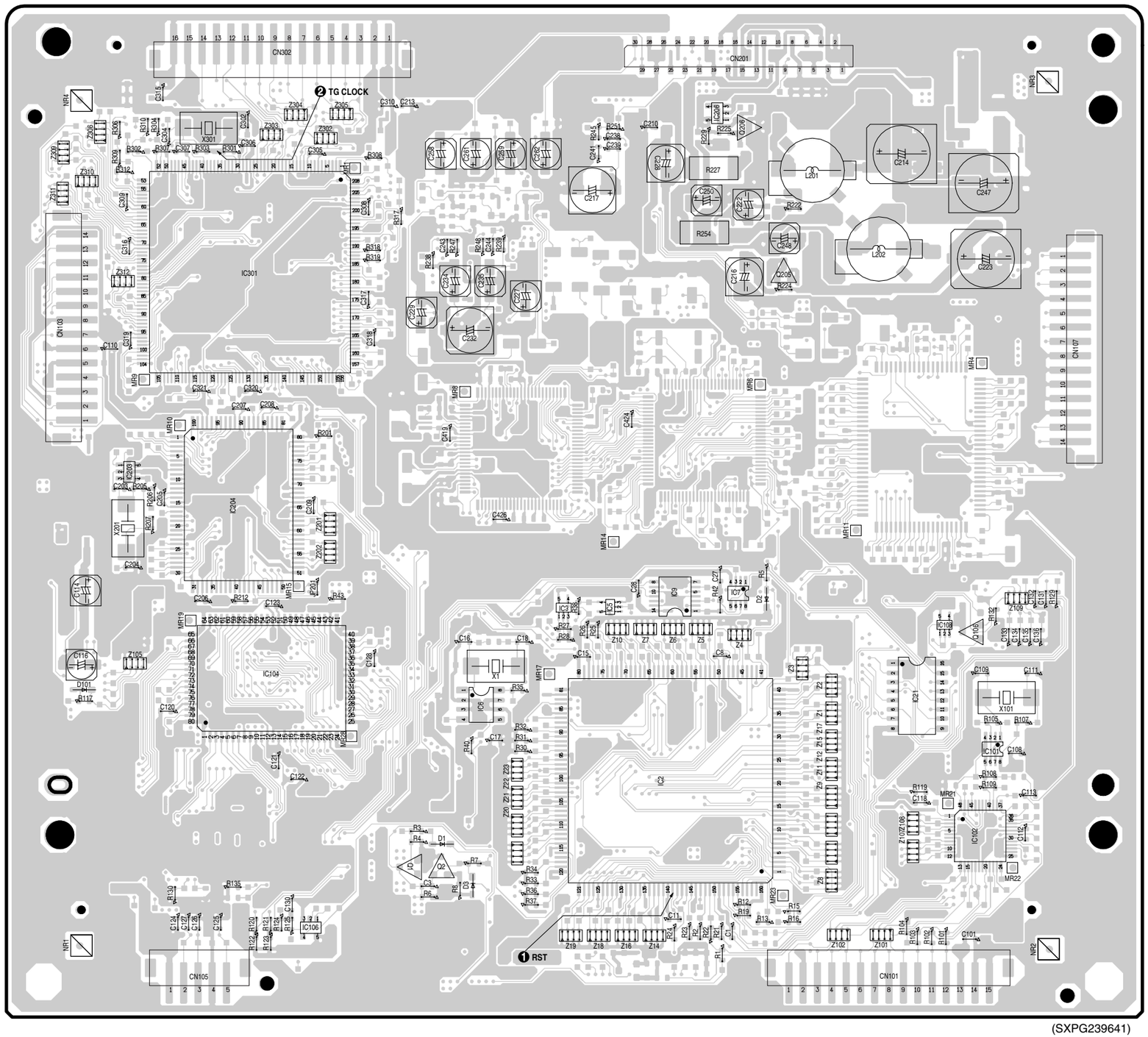


(SXPG239641)

(Example)
Transistor's symbolmark:
Q1

Applied for all transistors

A MAIN P.C.B. (B SIDE)



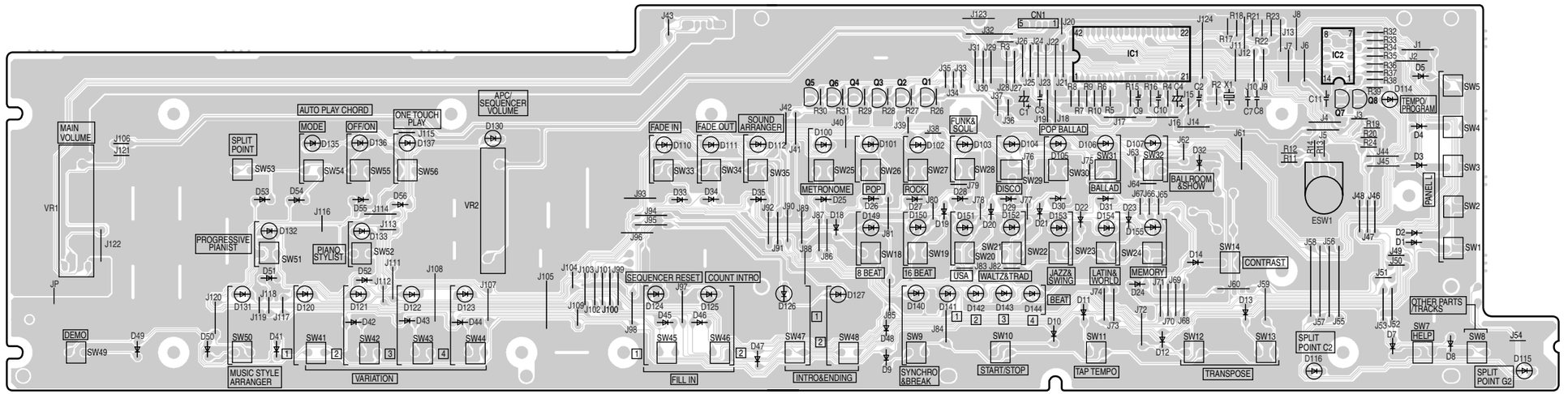
(SXPG239641)

(Example)
Transistor's symbolmark:

Q1

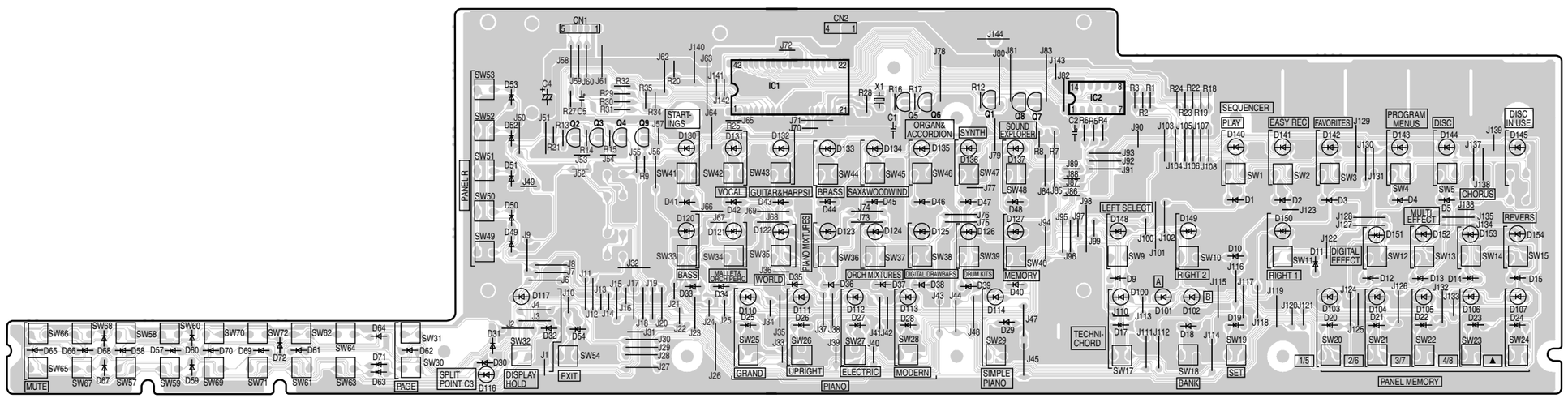
Applied for all transistors

C CPL P.C.B.



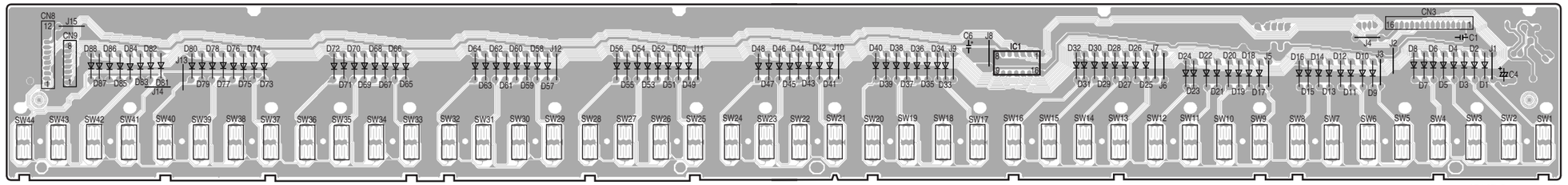
(SXPG226551A)

D CPR P.C.B.



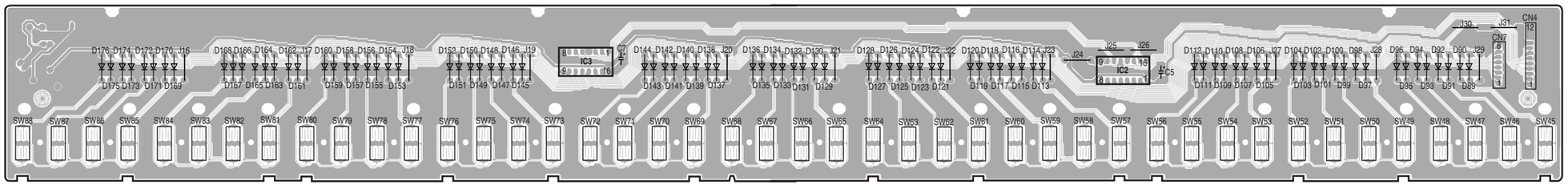
(SXPG226551B)

E MKB1 P.C.B.



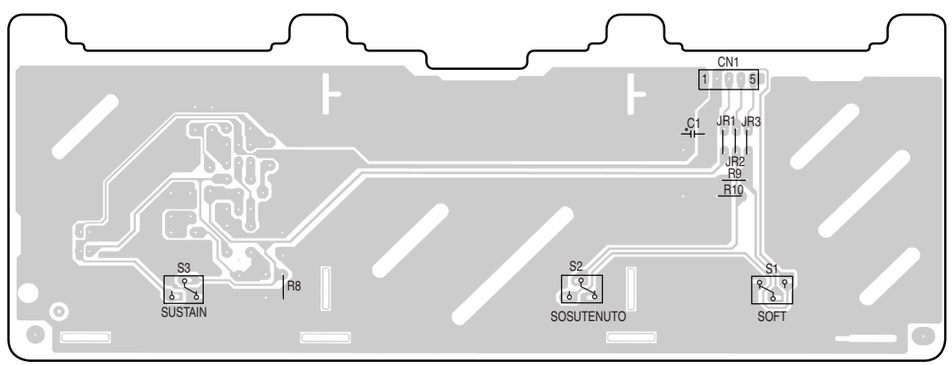
(SXPG231111A)

F MKB2 P.C.B.



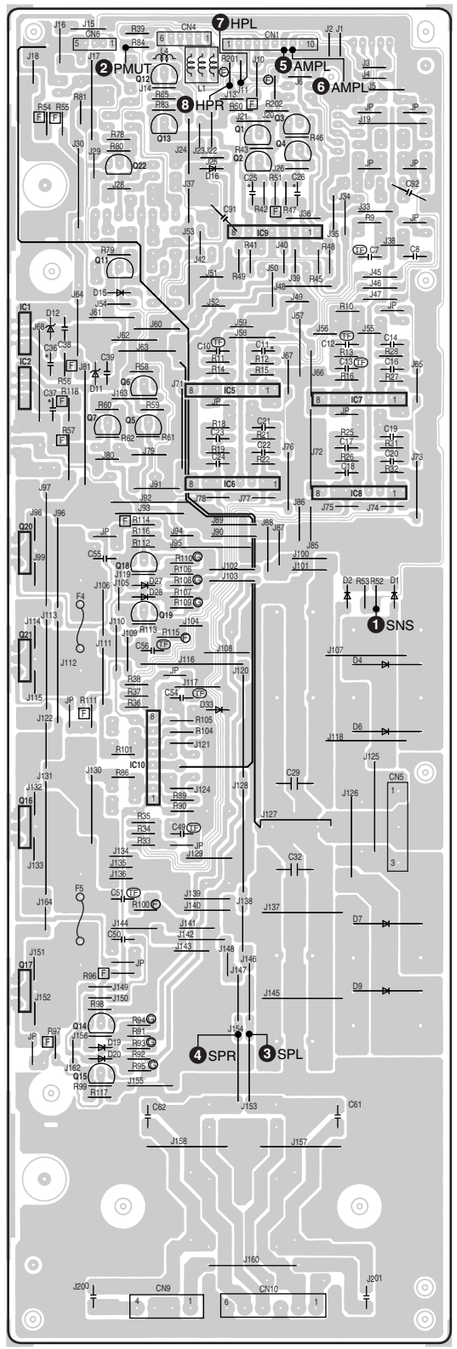
(SXPG231111B)

G PKB P.C.B.



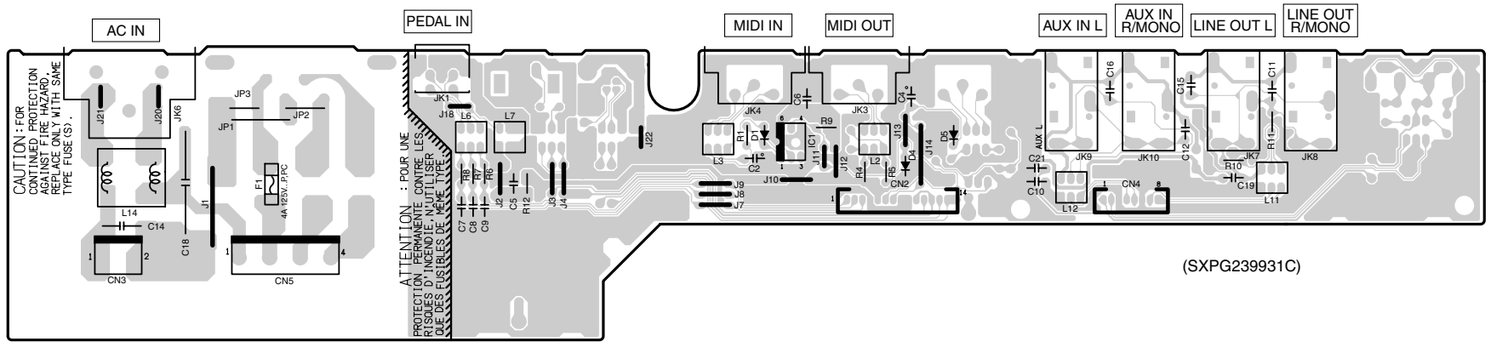
(SXPG218221)

B AS P.C.B.



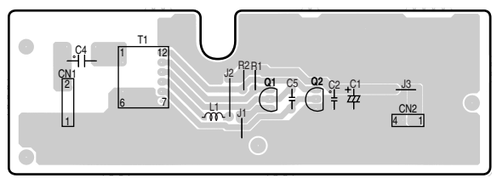
(SXPG2170421)

H JACK P.C.B.


AC IN
PEDAL IN
MIDI IN
MIDI OUT
AUX IN L
AUX IN R/MONO
LINE OUT L
LINE OUT R/MONO
CAUTION : FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE FUSE (S).
ATTENTION : POUR UNE PROTECTION PERMANENTE CONTRE LES RISQUES D'INCENDIE, N'UTILISER QU'DES FUSIBLES DE MEME TYPE.

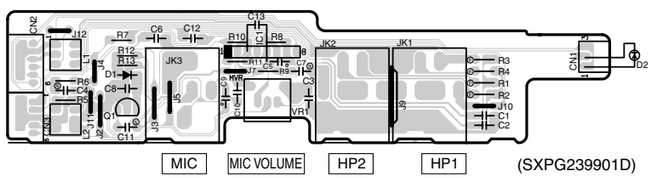
(SXPG239931C)

I INV P.C.B.



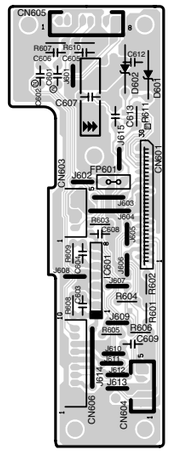
(SXPG226551C)

J HP MIC P.C.B.



(SXPG239901D)

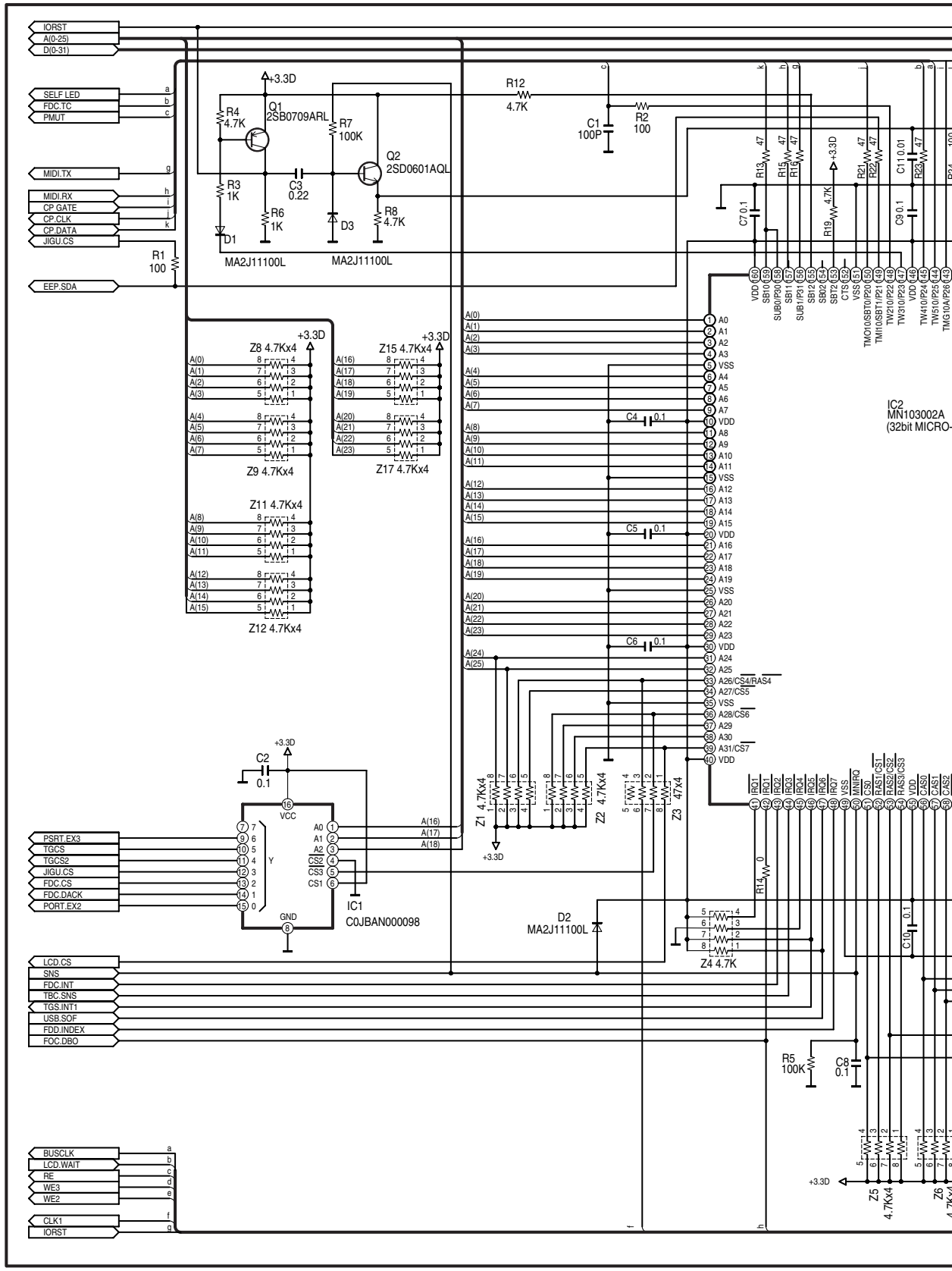
K RELAY P.C.B.

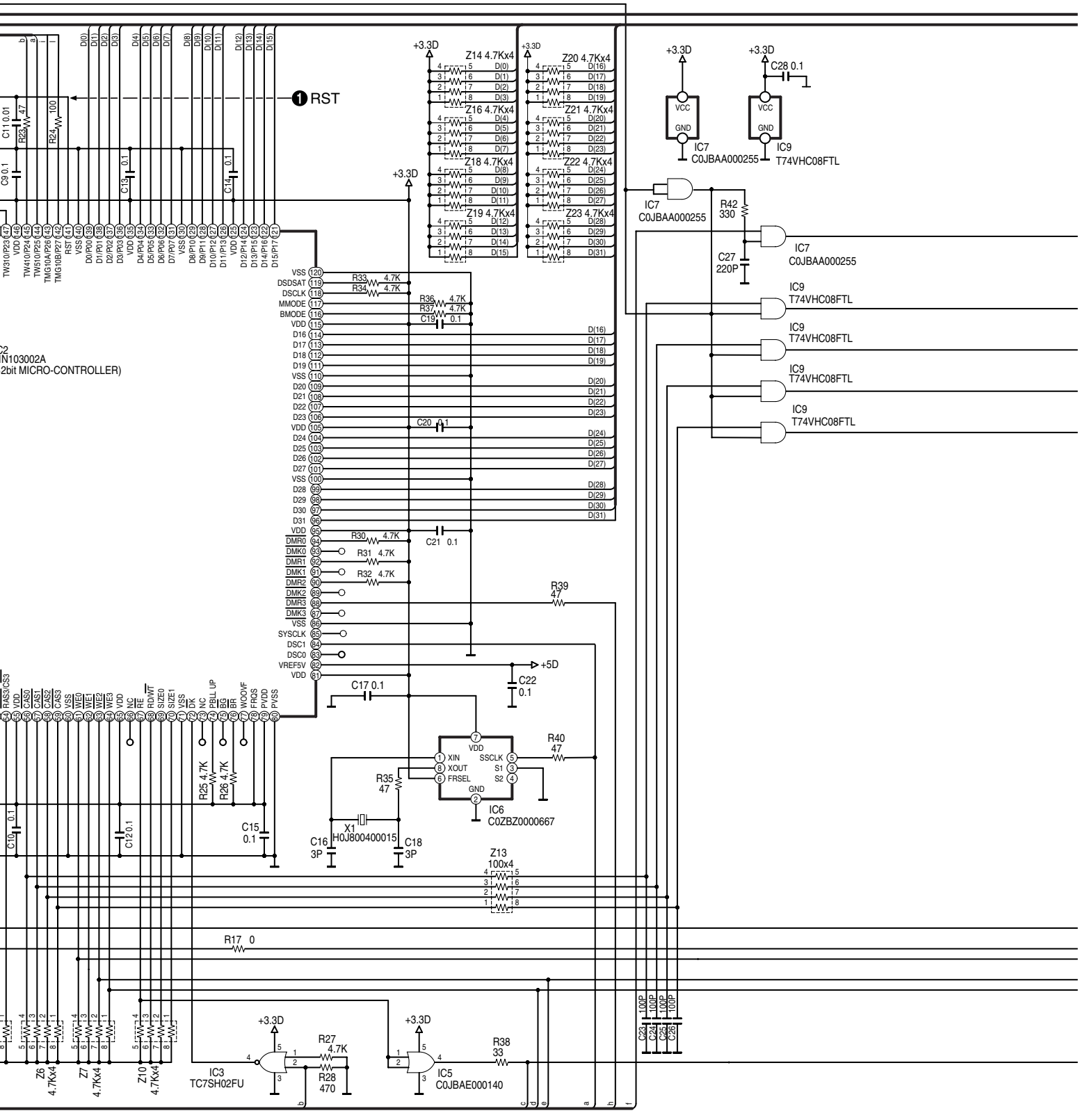


(SXPG239901G)

SCHEMATIC DIAGRAM-1

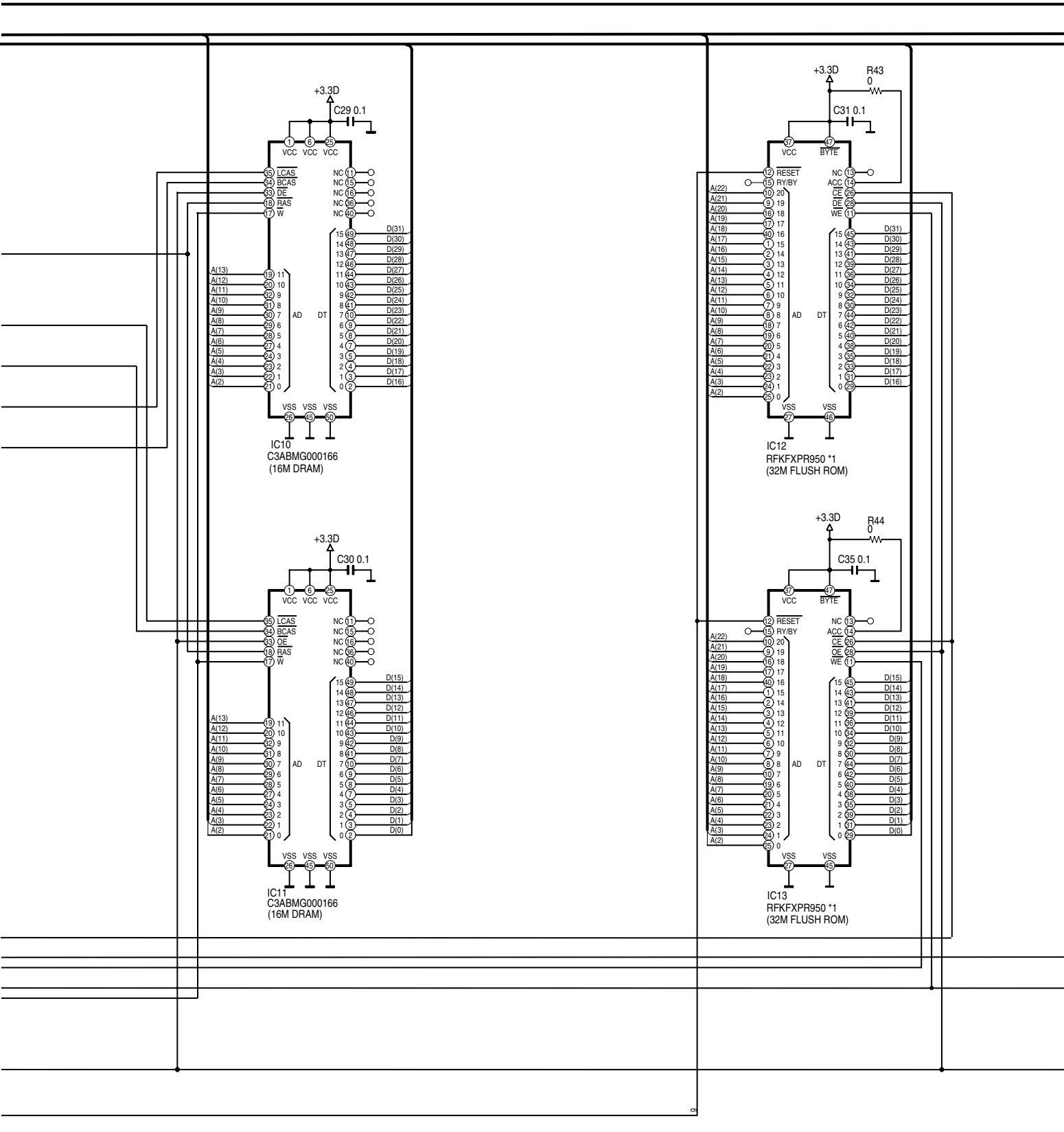
A MAIN 1/4 CIRCUIT

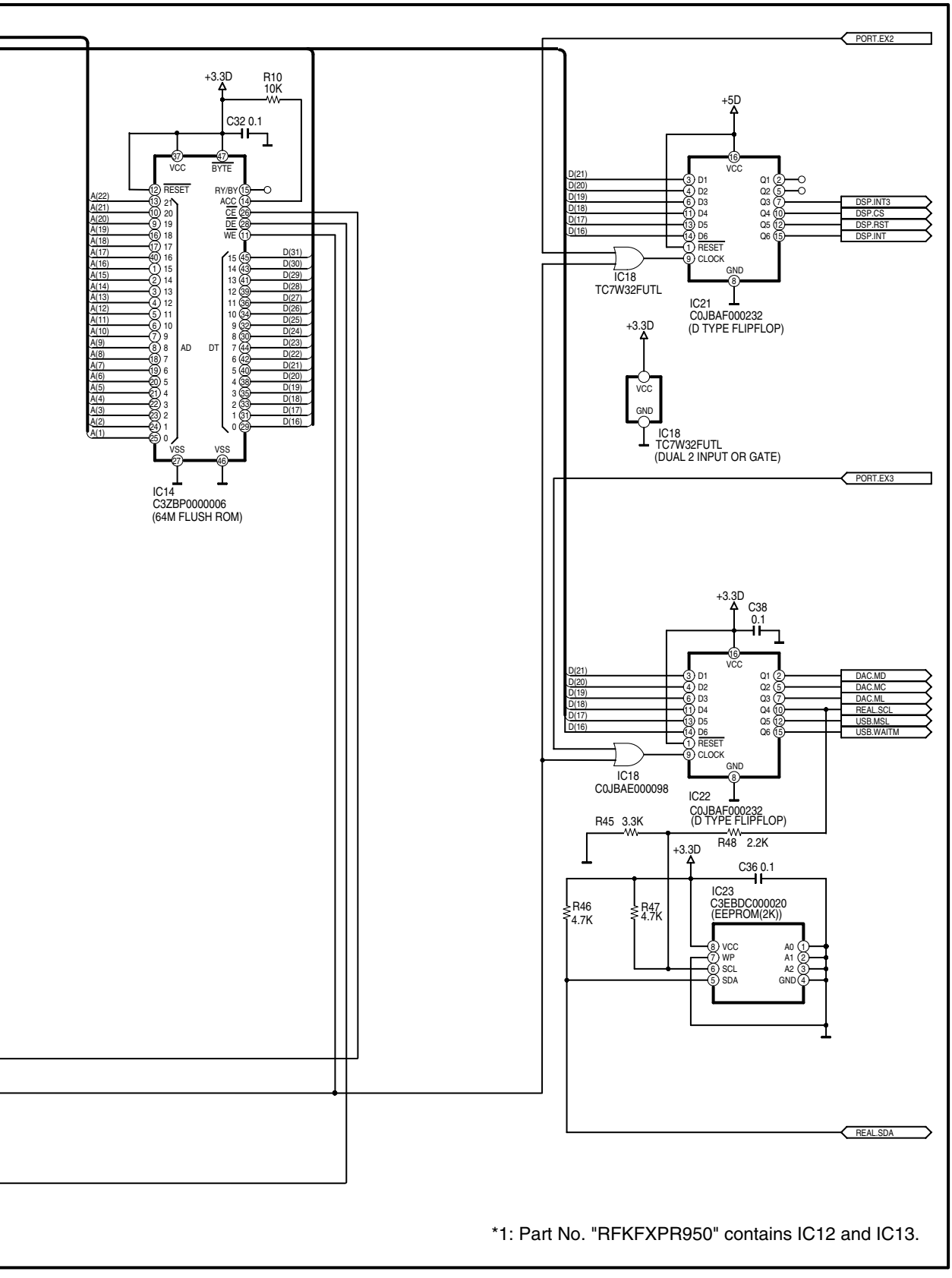




SX-PR950 MAIN 1/4 SCHEMATIC DIAGRAM (1/2)

SCHEMATIC DIAGRAM-2

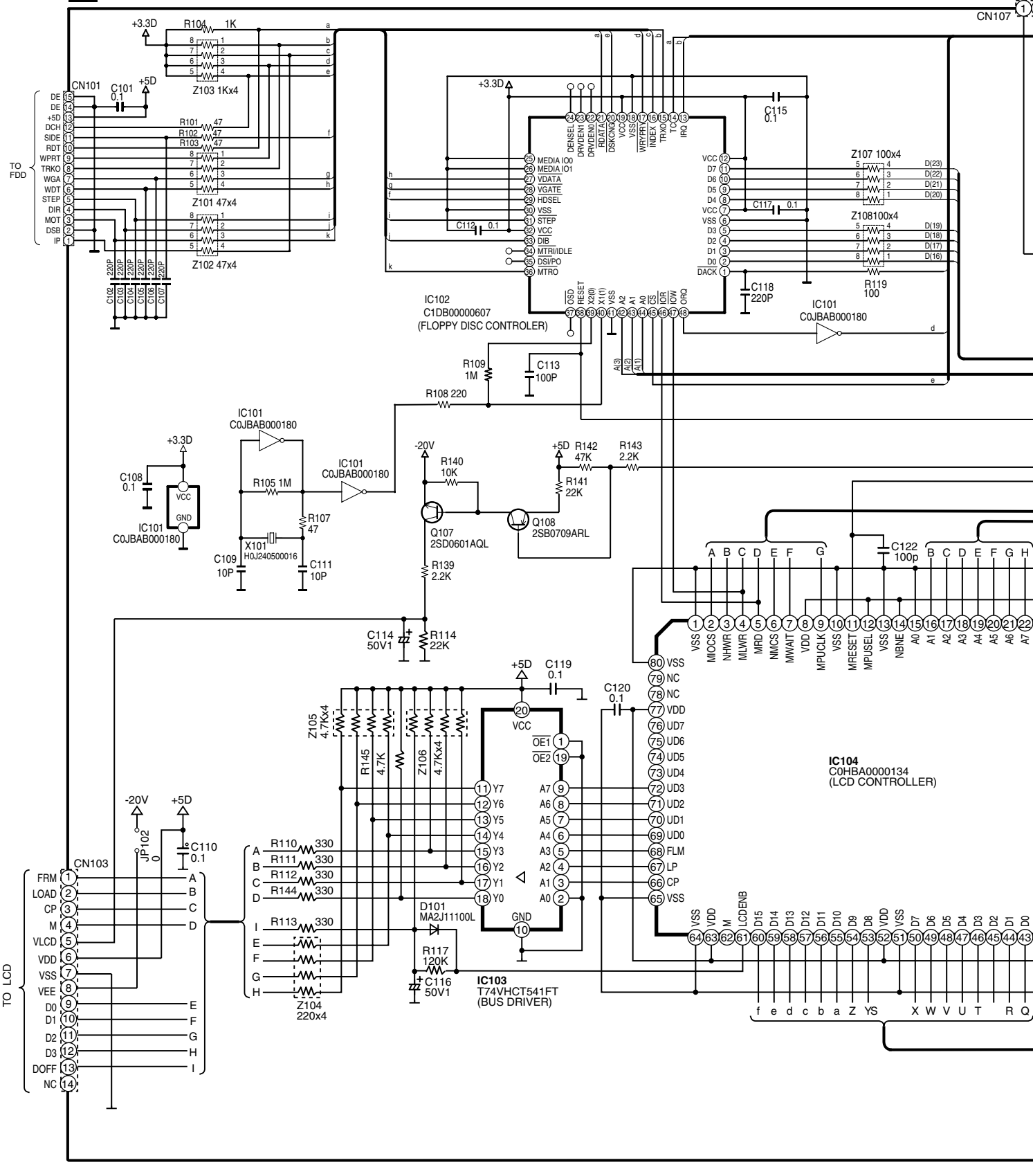


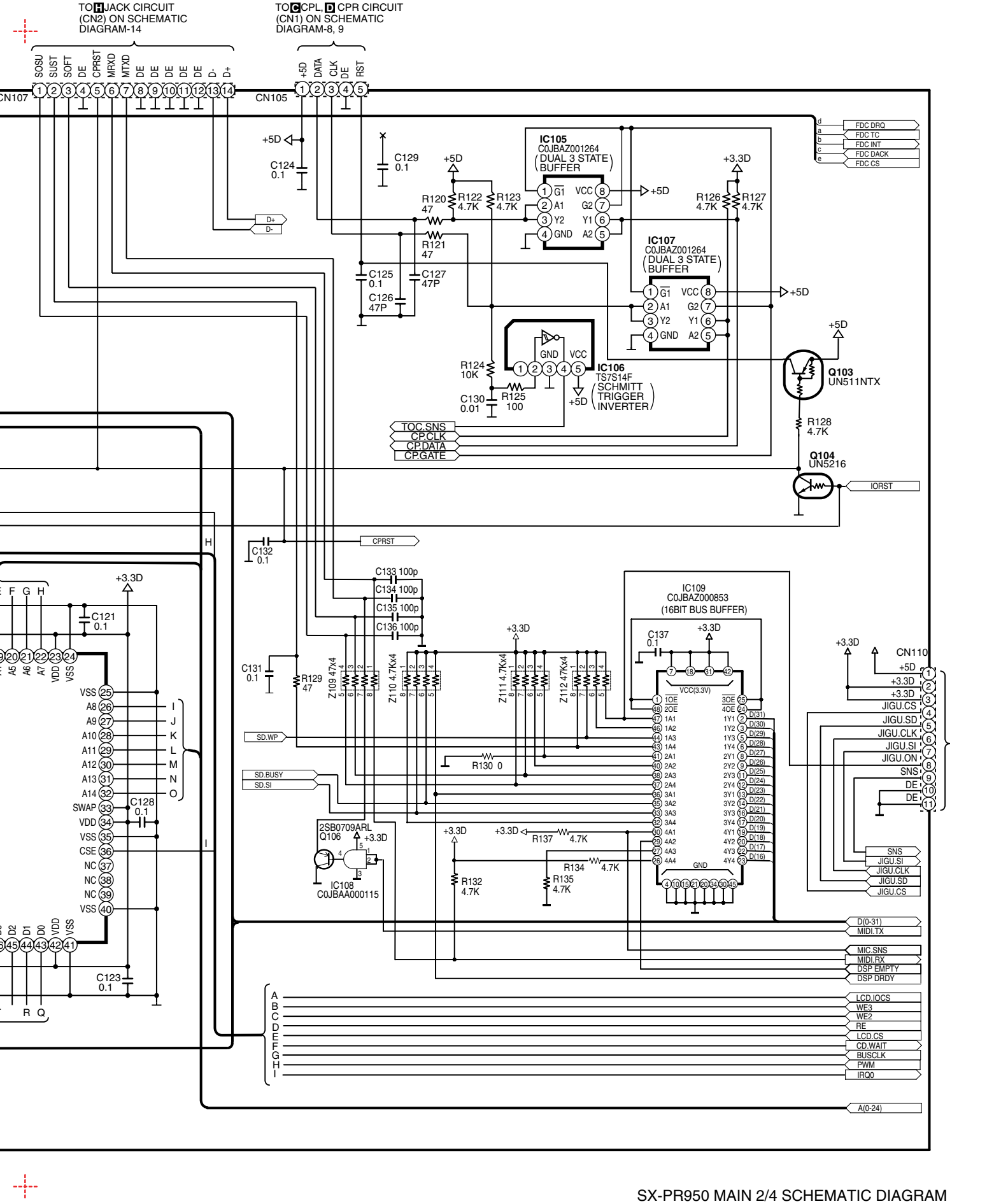


*1: Part No. "RFKFXPR950" contains IC12 and IC13.

SCHEMATIC DIAGRAM-3

A MAIN 2/4 CIRCUIT

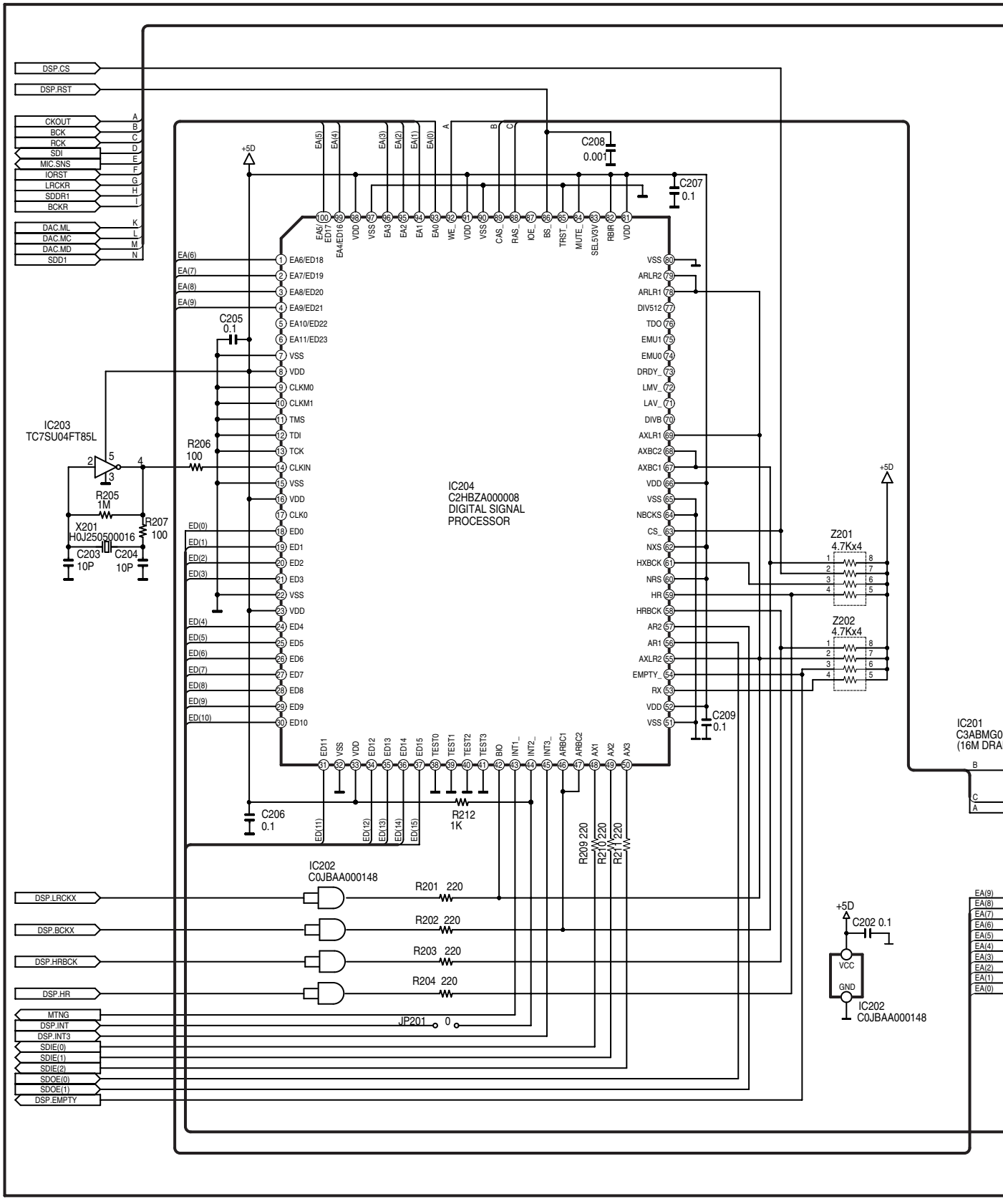


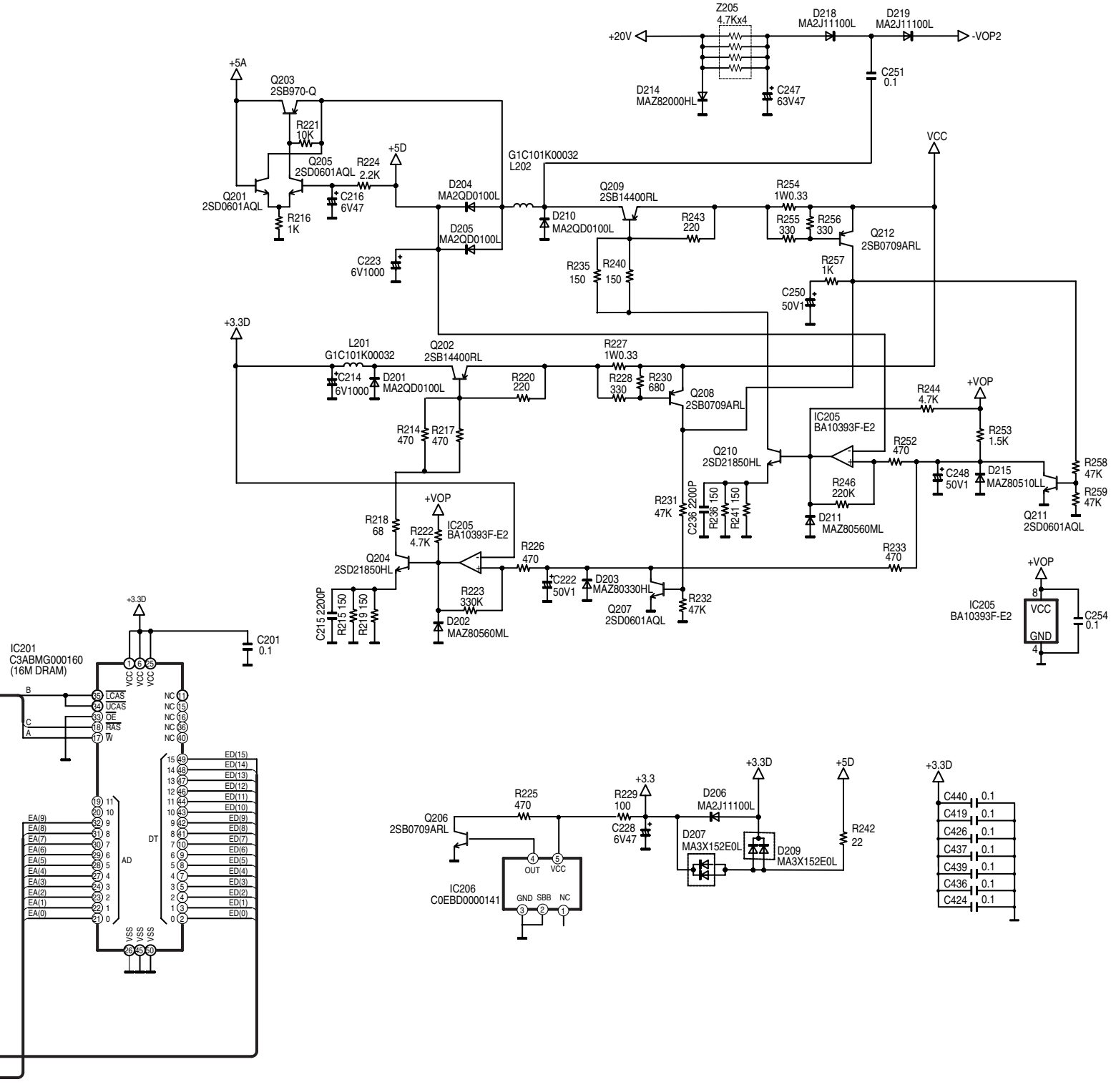


SX-PR950 MAIN 2/4 SCHEMATIC DIAGRAM

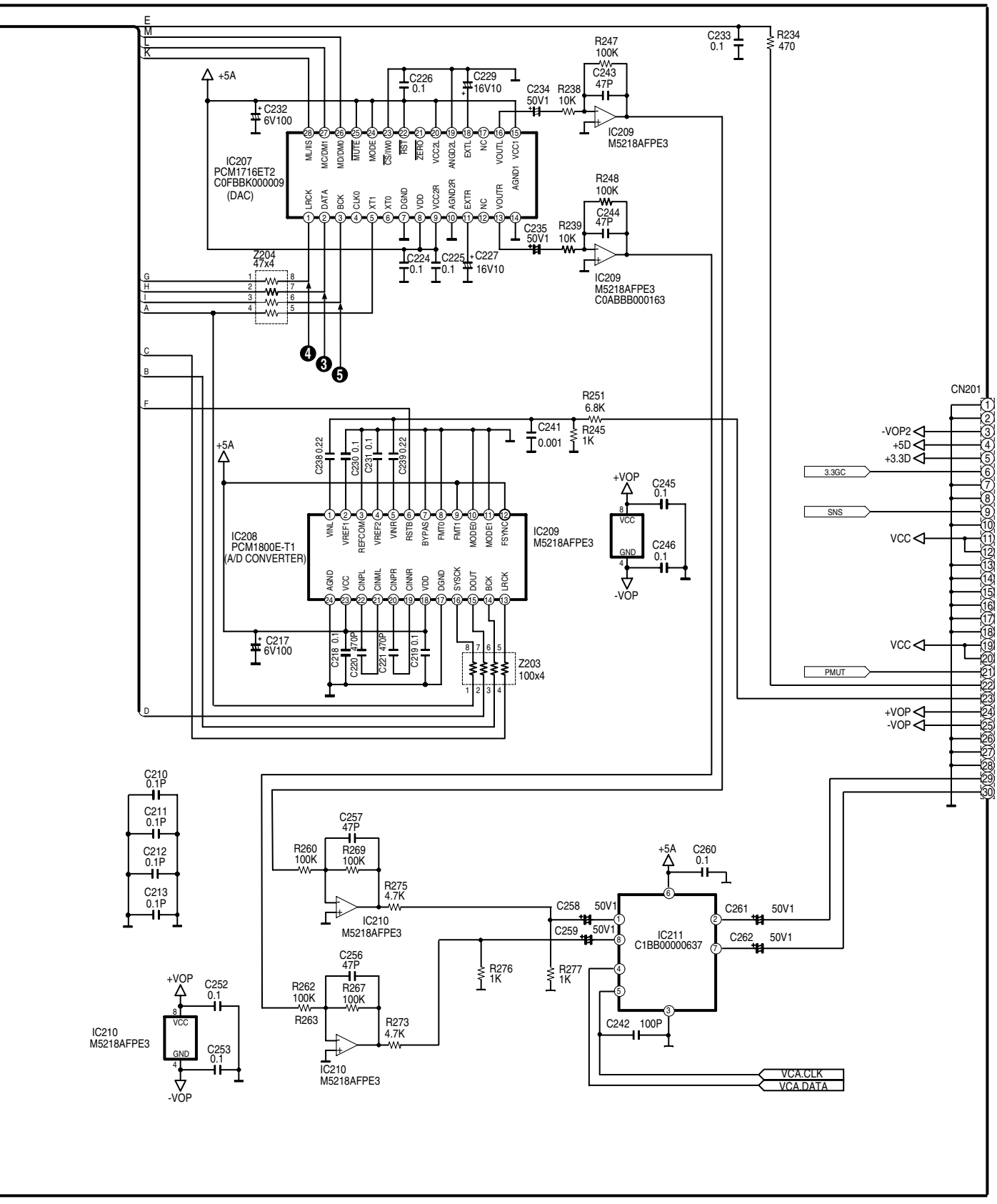
SCHEMATIC DIAGRAM-4

A MAIN 3/4 CIRCUIT




Z205
4.7Kx4
D218
MA2J11100L
D219
MA2J11100L
+20V
-VOP2
C251
0.1
D214
MAZ82000HL
C247
63V47
+5A
Q203
2SB970-Q
R221
10K
Q205
2SD0601AQL
R224
2.2K
+5D
C216
6V47
Q201
2SD0601AQL
R216
1K
G1C101K00032
L202
D204
MA2QD0100L
D205
MA2QD0100L
D210
MA2QD0100L
Q209
2SB14400RL
R243
220
VCC
R254
1W0.33
R255
330
R256
330
Q212
2SB0709ARL
R257
1K
C250
50V1
C223
6V1000
R235
150
R240
150
+3.3D
L201
G1C101K00032
C214
6V1000
D201
MA2QD0100L
Q202
2SB14400RL
R220
220
R227
1W0.33
R228
330
R230
680
Q208
2SB0709ARL
R214
470
R217
470
R244
4.7K
+VOP
IC205
BA10393F-E2
R253
1.5K
Q210
2SD21850HL
R252
470
R258
47K
C248
50V1
D215
MAZ80510LL
R259
47K
R246
220K
D211
MAZ80560ML
Q211
2SD0601AQL
R231
47K
C236 2200P
R236 150
R241 150
R218
68
R222
4.7K
IC205
BA10393F-E2
+VOP
Q204
2SD21850HL
R226
470
R233
470
C222
50V1
D203
MAZ80330HL
R232
47K
Q207
2SD0601AQL
C215 2200P
R215 150
R219 150
R223
330K
D202
MAZ80560ML
+VOP
8
VCC
GND
4
IC205
BA10393F-E2
C254
0.1
+3.3D
C201
0.1
IC201
C3ABMG000160
(16M DRAM)
VCC
VCC
VCC
1
6
25
B
C
A
35 LCAS
34 UCAS
33 OE
18 RAS
17 W
NC 11
NC 15
NC 16
NC 36
NC 40
15 49 ED(15)
14 48 ED(14)
13 47 ED(13)
12 46 ED(12)
11 44 ED(11)
10 43 ED(10)
9 42 ED(9)
8 41 ED(8)
7 10 ED(7)
6 9 ED(6)
5 8 ED(5)
4 7 ED(4)
3 5 ED(3)
2 4 ED(2)
1 3 ED(1)
0 2 ED(0)
19 11
20 10
32 9
31 8
30 7
29 6
28 5
27 4
24 3
23 2
22 1
21 0
EA(9)
EA(8)
EA(7)
EA(6)
EA(5)
EA(4)
EA(3)
EA(2)
EA(1)
EA(0)
AD
DT
VSS
VSS
VSS
26
45
50
R225
470
Q206
2SB0709ARL
R229
100
+3.3
C228
6V47
D206
MA2J11100L
+3.3D
+5D
D207
MA3X152E0L
D209
MA3X152E0L
R242
22
IC206
C0EBD0000141
OUT
VCC
GND
SBB
NC
4
5
3
2
1
+3.3D
C440 0.1
C419 0.1
C426 0.1
C437 0.1
C439 0.1
C436 0.1
C424 0.1

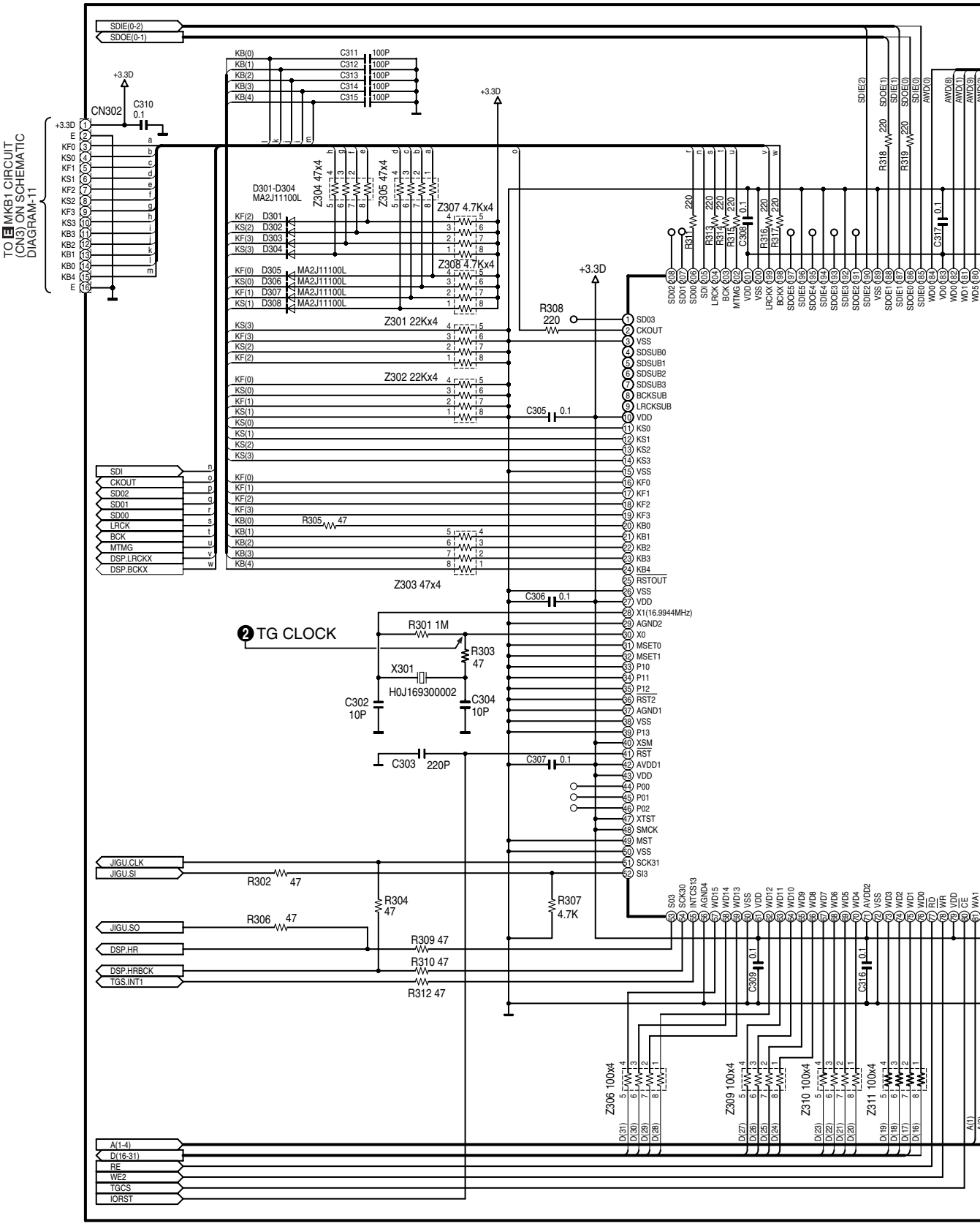
SCHEMATIC DIAGRAM-5

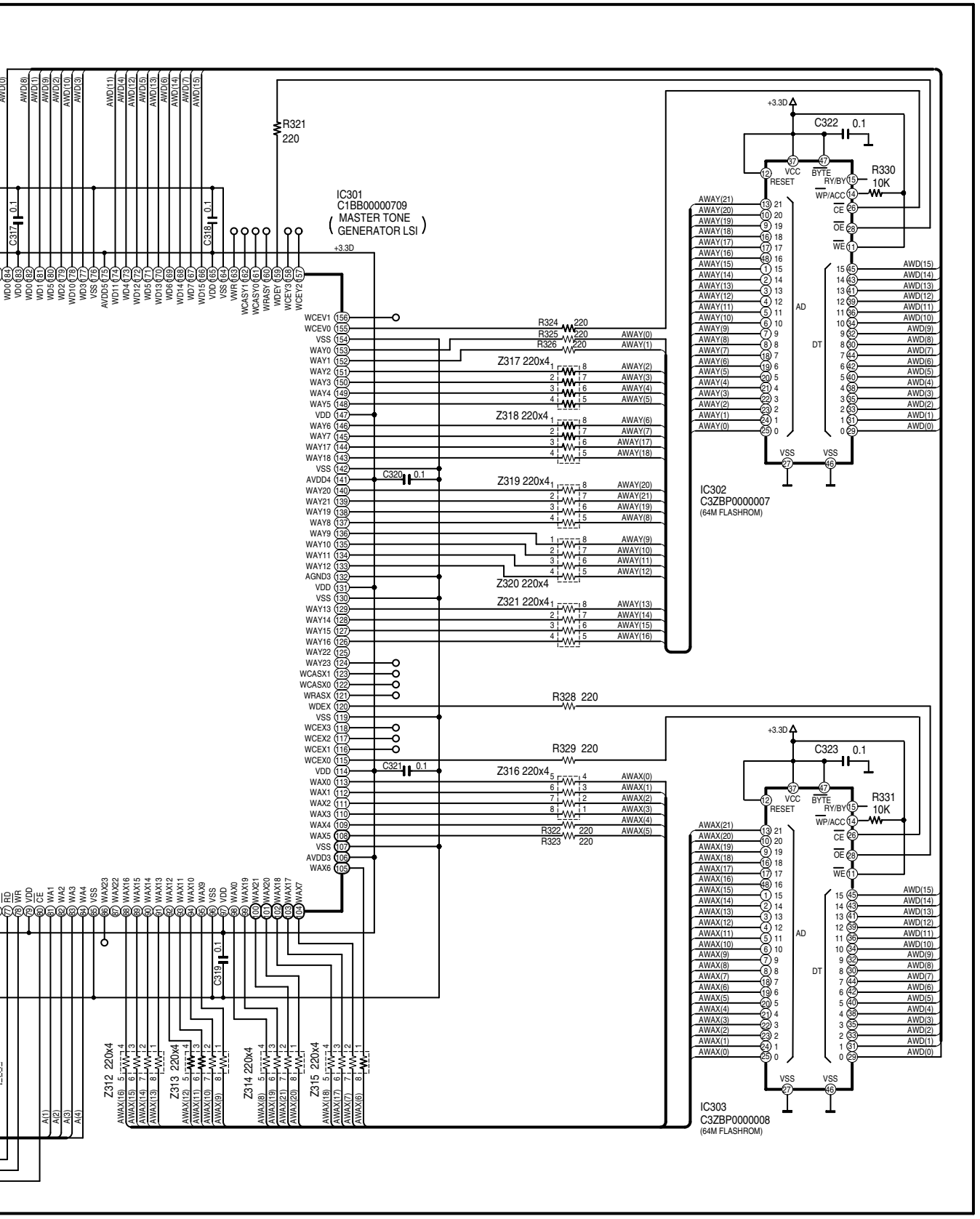


TO K RELAY CIRCUIT
(CN601) ON SCHEMATIC
DIAGRAM-15

SCHEMATIC DIAGRAM-6

A MAIN 4/4 CIRCUIT

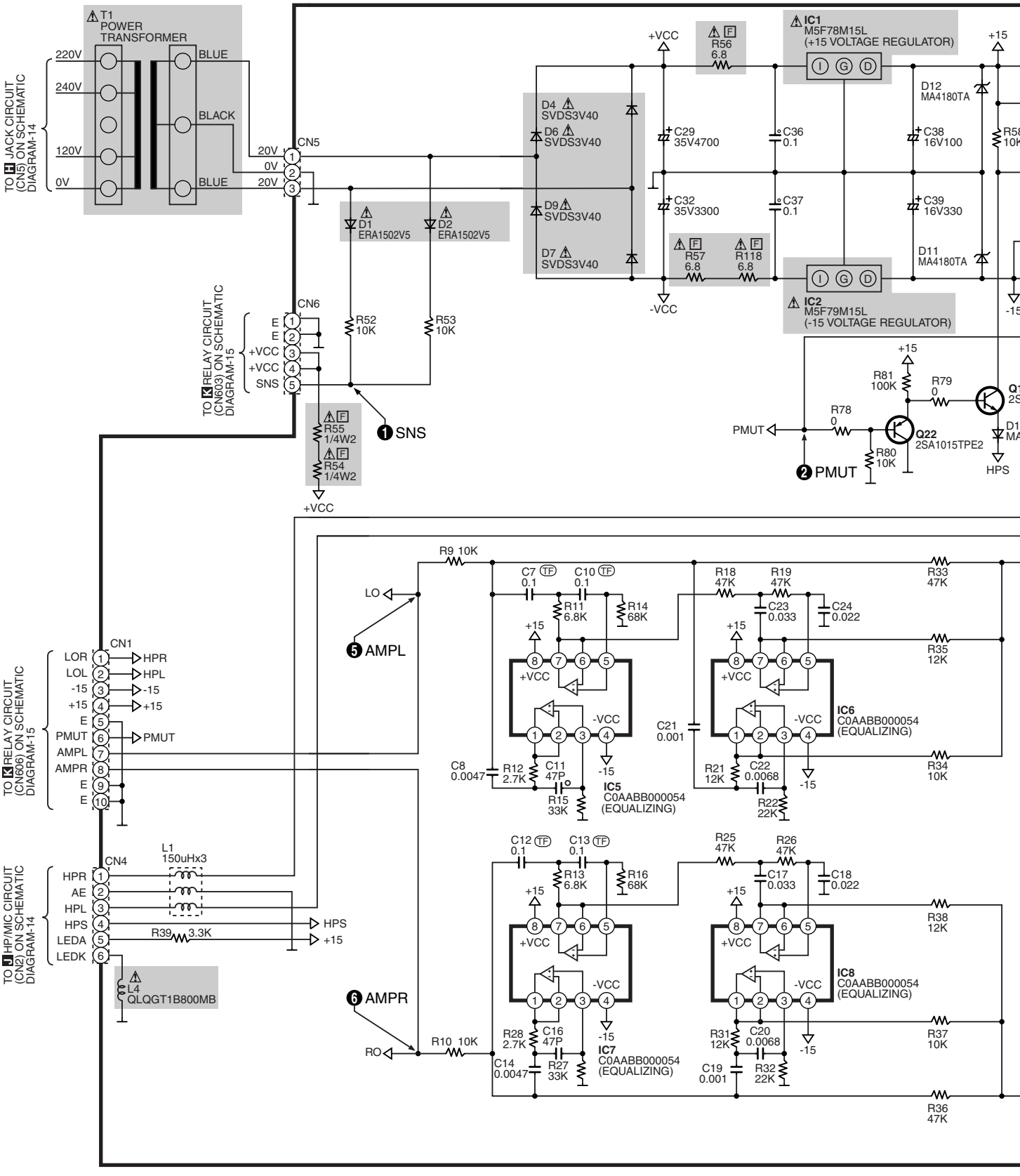


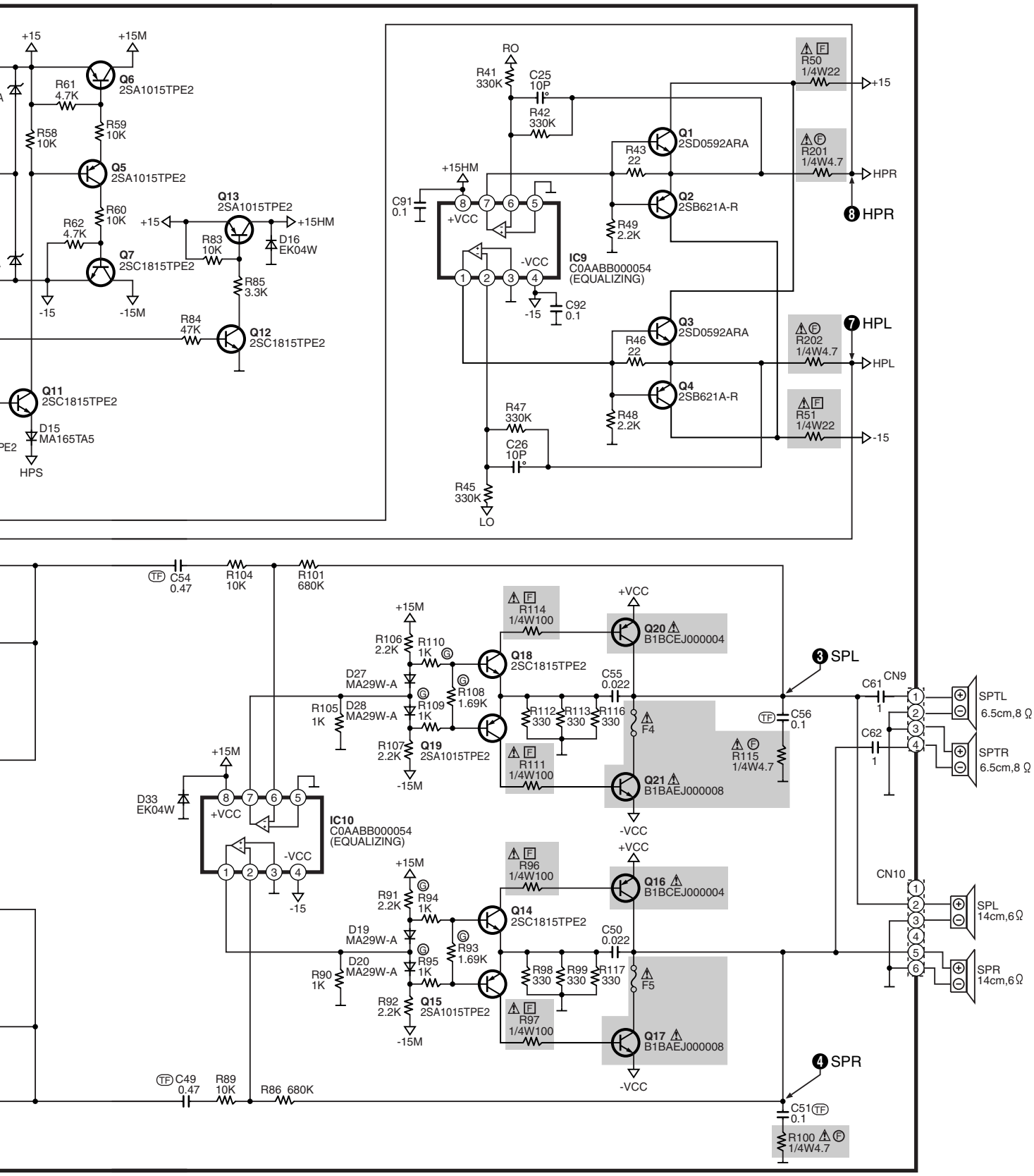


SX-PR950 MAIN 4/4 SCHEMATIC DIAGRAM

SCHEMATIC DIAGRAM-7

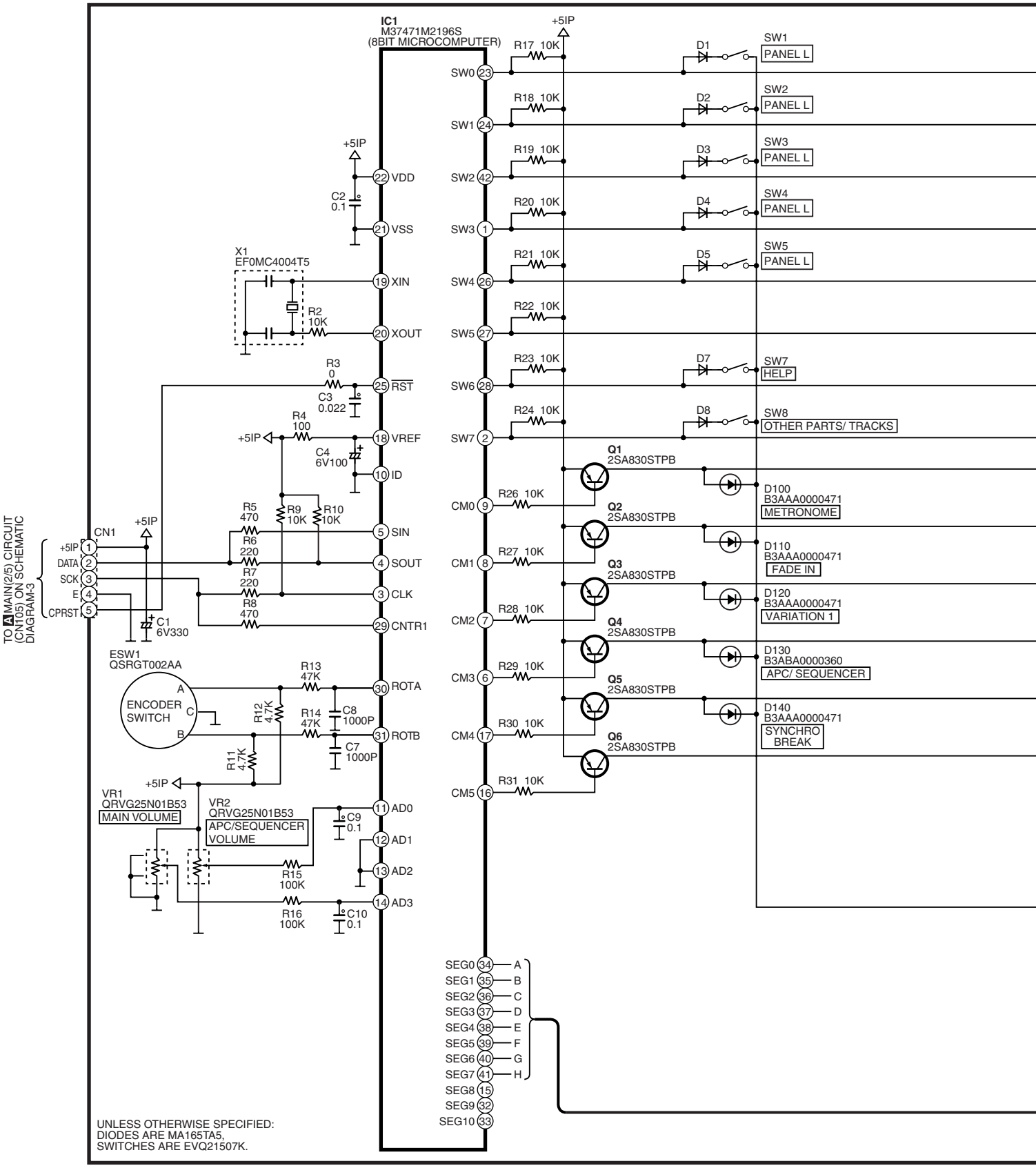
B AS CIRCUIT

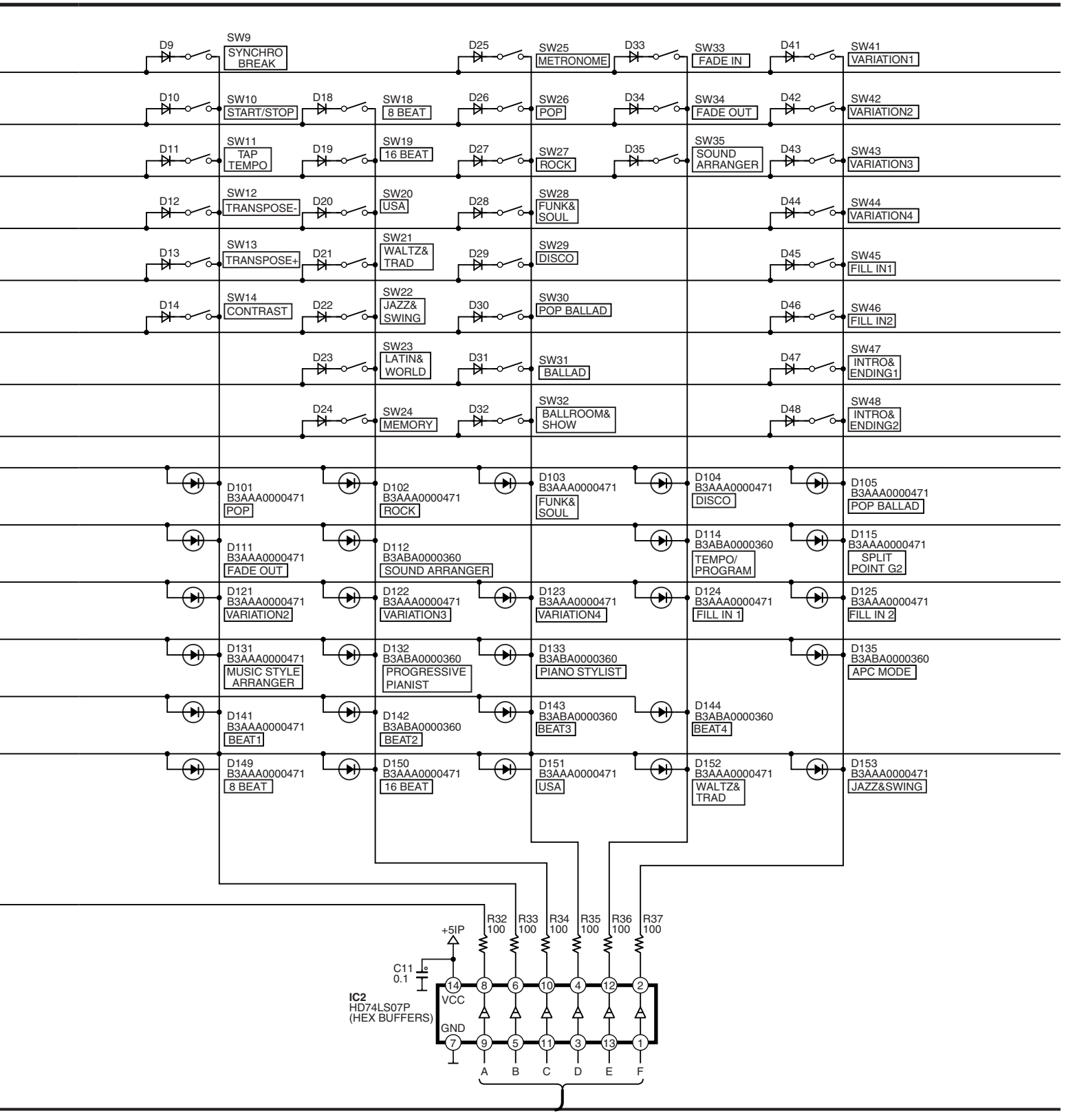



+15
+15M
Q6
2SA1015TPE2
R61
4.7K
R58
10K
R59
10K
Q5
2SA1015TPE2
R60
10K
R62
4.7K
Q13
2SA1015TPE2
+15
+15HM
R83
10K
D16
EK04W
Q7
2SC1815TPE2
R85
3.3K
-15
-15M
R84
47K
Q12
2SC1815TPE2
Q11
2SC1815TPE2
D15
MA165TA5
HPS
RO
R41
330K
C25
10P
R42
330K
+15HM
C91
0.1
+VCC
-VCC
IC9
C0AABB000054
(EQUALIZING)
C92
0.1
-15
R43
22
Q1
2SD0592ARA
Q2
2SB621A-R
R49
2.2K
R50
1/4W22
R201
1/4W4.7
HPR
8 HPR
R46
22
Q3
2SD0592ARA
Q4
2SB621A-R
R48
2.2K
R202
1/4W4.7
7 HPL
HPL
R47
330K
C26
10P
R45
330K
LO
R51
1/4W22
-15
TF C54
0.47
R104
10K
R101
680K
+15M
R106
2.2K
R110
1K
R114
1/4W100
Q20
B1BCEJ000004
Q18
2SC1815TPE2
D27
MA29W-A
R108
1.69K
R109
1K
R105
1K
D28
MA29W-A
R107
2.2K
Q19
2SA1015TPE2
-15M
R112
330
R113
330
R116
330
F4
C55
0.022
R111
1/4W100
Q21
B1BAEJ000008
-VCC
3 SPL
TF C56
0.1
R115
1/4W4.7
C61
1
C62
1
CN9
SPTL
6.5cm,8 Ω
SPTR
6.5cm,8 Ω
+15M
D33
EK04W
+VCC
-VCC
IC10
C0AABB000054
(EQUALIZING)
-15
R96
1/4W100
Q16
B1BCEJ000004
Q14
2SC1815TPE2
R91
2.2K
R94
1K
D19
MA29W-A
R93
1.69K
R95
1K
D20
MA29W-A
R90
1K
R92
2.2K
Q15
2SA1015TPE2
-15M
R98
330
R99
330
R117
330
F5
C50
0.022
R97
1/4W100
Q17
B1BAEJ000008
-VCC
CN10
SPL
14cm,6Ω
SPR
14cm,6Ω
4 SPR
TF C49
0.47
R89
10K
R86 680K
TF C51
0.1
R100
1/4W4.7

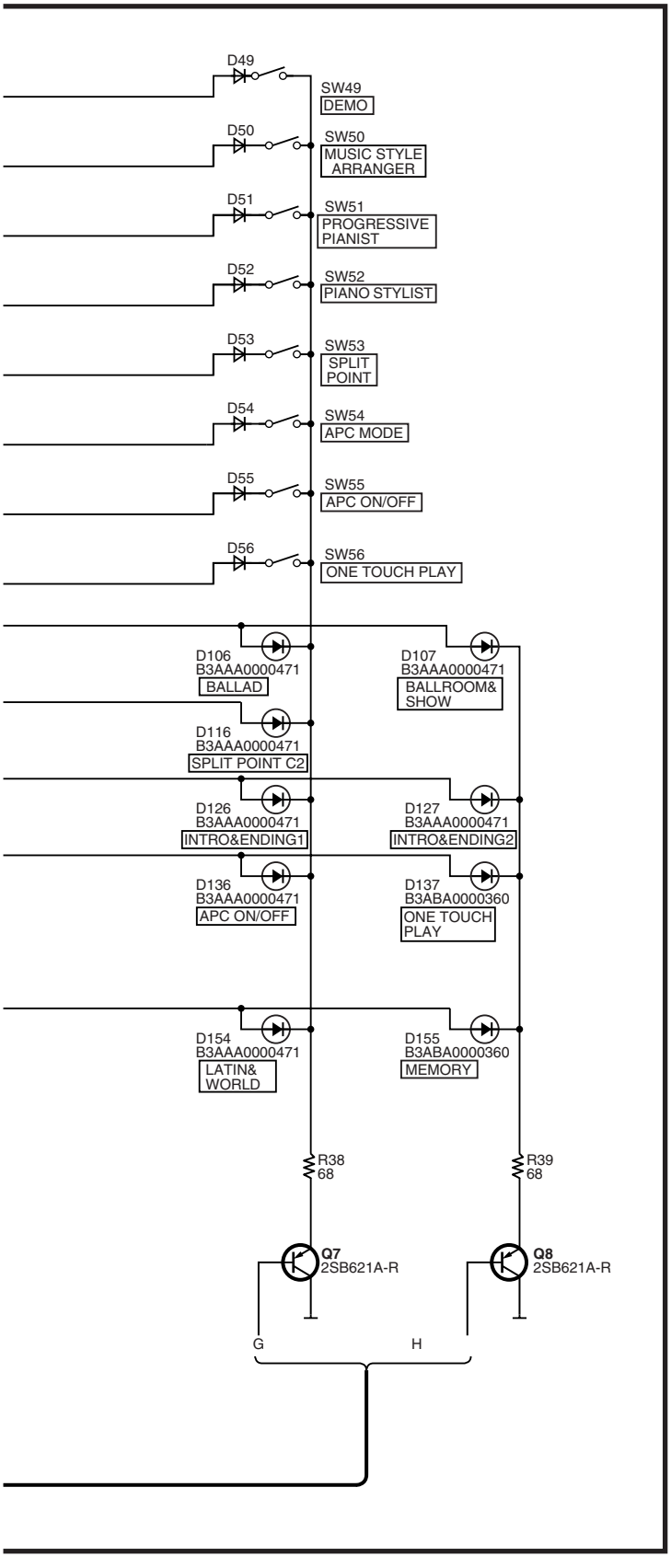
SCHEMATIC DIAGRAM-8

C CPL CIRCUIT

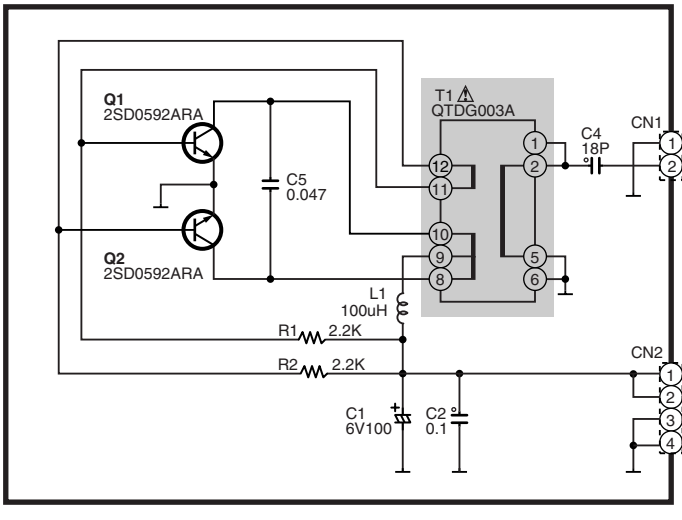



D9
SW9
SYNCHRO BREAK
D25
SW25
METRONOME
D33
SW33
FADE IN
D41
SW41
VARIATION1
D10
SW10
START/STOP
D18
SW18
8 BEAT
D26
SW26
POP
D34
SW34
FADE OUT
D42
SW42
VARIATION2
D11
SW11
TAP TEMPO
D19
SW19
16 BEAT
D27
SW27
ROCK
D35
SW35
SOUND ARRANGER
D43
SW43
VARIATION3
D12
SW12
TRANSPOSE-
D20
SW20
USA
D28
SW28
FUNK& SOUL
D44
SW44
VARIATION4
D13
SW13
TRANSPOSE+
D21
SW21
WALTZ& TRAD
D29
SW29
DISCO
D45
SW45
FILL IN1
D14
SW14
CONTRAST
D22
SW22
JAZZ& SWING
D30
SW30
POP BALLAD
D46
SW46
FILL IN2
D23
SW23
LATIN& WORLD
D31
SW31
BALLAD
D47
SW47
INTRO& ENDING1
D24
SW24
MEMORY
D32
SW32
BALLROOM& SHOW
D48
SW48
INTRO& ENDING2
D101 B3AAA0000471 POP
D102 B3AAA0000471 ROCK
D103 B3AAA0000471 FUNK& SOUL
D104 B3AAA0000471 DISCO
D105 B3AAA0000471 POP BALLAD
D111 B3AAA0000471 FADE OUT
D112 B3ABA0000360 SOUND ARRANGER
D114 B3ABA0000360 TEMPO/ PROGRAM
D115 B3AAA0000471 SPLIT POINT G2
D121 B3AAA0000471 VARIATION2
D122 B3AAA0000471 VARIATION3
D123 B3AAA0000471 VARIATION4
D124 B3AAA0000471 FILL IN 1
D125 B3AAA0000471 FILL IN 2
D131 B3AAA0000471 MUSIC STYLE ARRANGER
D132 B3ABA0000360 PROGRESSIVE PIANIST
D133 B3ABA0000360 PIANO STYLIST
D135 B3ABA0000360 APC MODE
D141 B3AAA0000471 BEAT1
D142 B3ABA0000360 BEAT2
D143 B3ABA0000360 BEAT3
D144 B3ABA0000360 BEAT4
D149 B3AAA0000471 8 BEAT
D150 B3AAA0000471 16 BEAT
D151 B3AAA0000471 USA
D152 B3AAA0000471 WALTZ& TRAD
D153 B3AAA0000471 JAZZ&SWING
R32 100
R33 100
R34 100
R35 100
R36 100
R37 100
+5IP
C11 0.1
IC2
HD74LS07P
(HEX BUFFERS)
VCC
GND
14
8
6
10
4
12
2
7
9
5
11
3
13
1
A
B
C
D
E
F

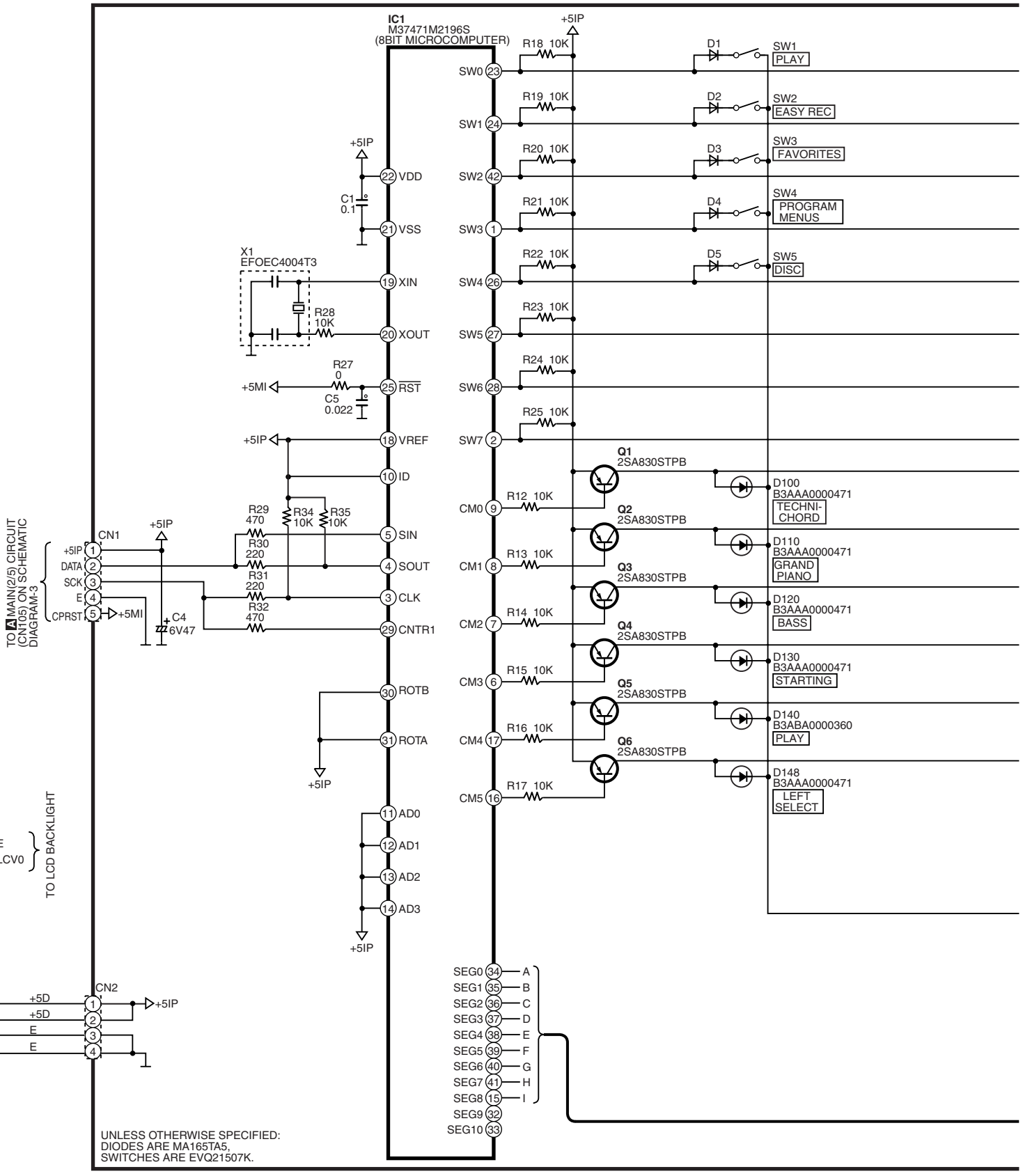
SCHEMATIC DIAGRAM-9



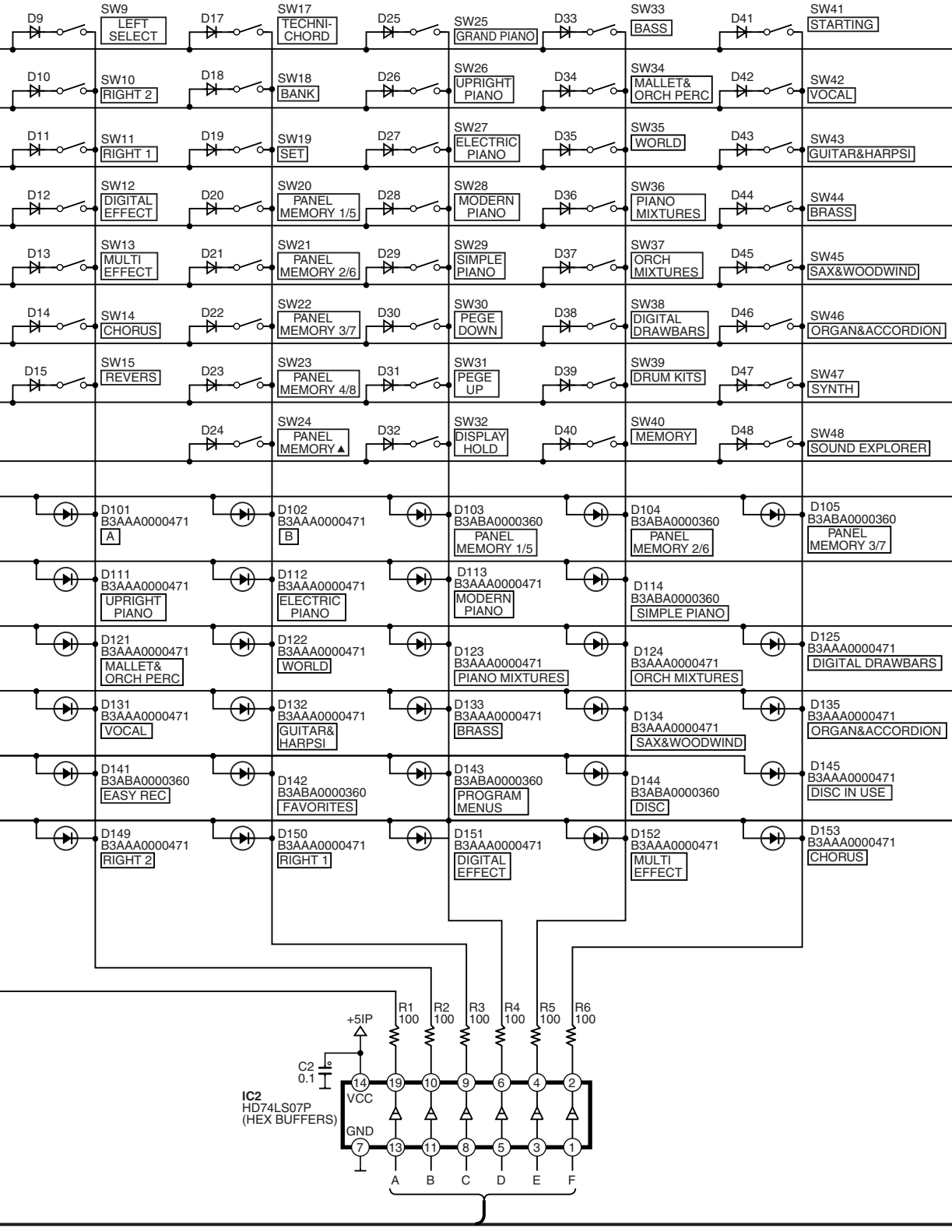
I INV CIRCUIT

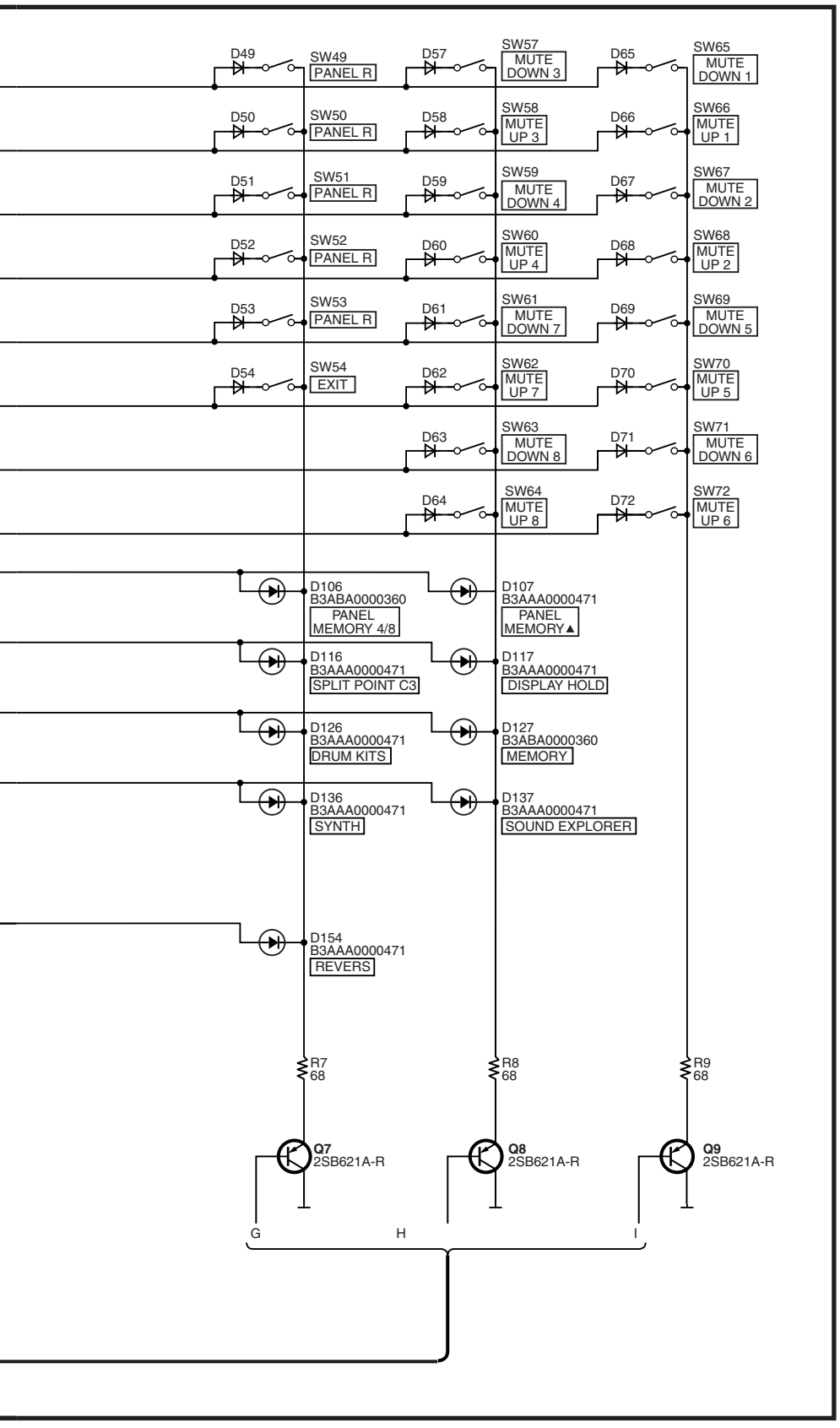


D CPR CIRCUIT



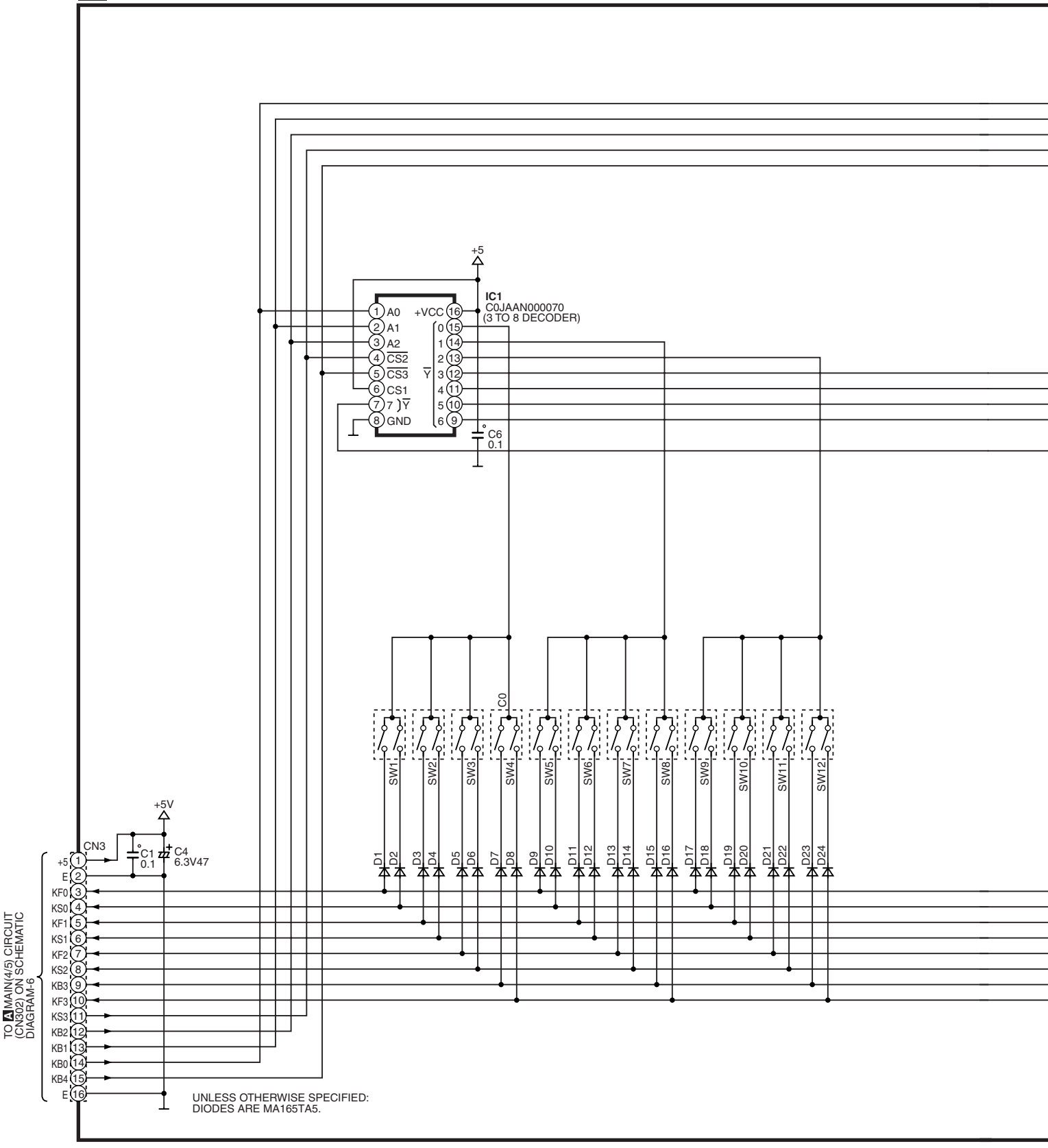
SCHEMATIC DIAGRAM-10

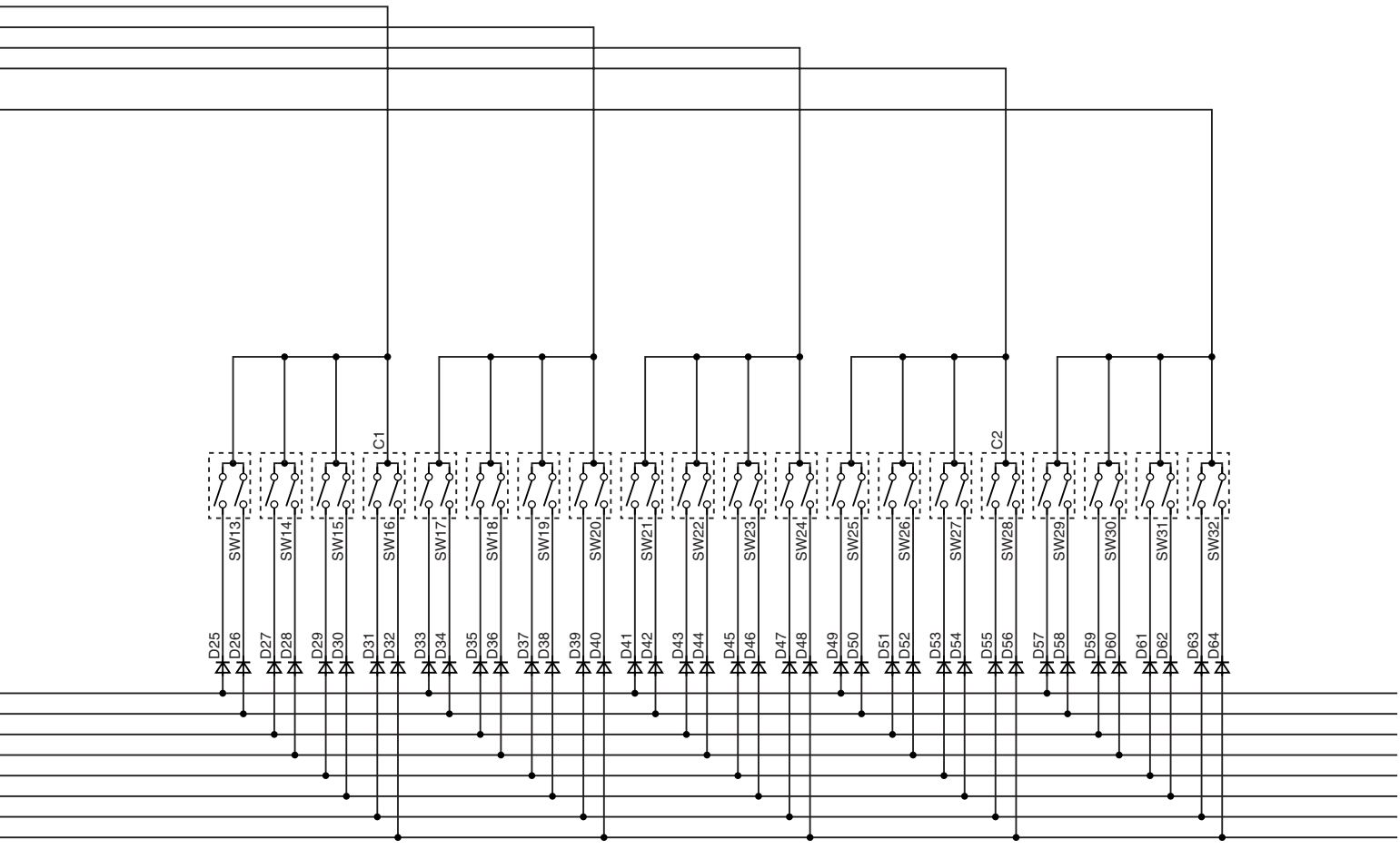



D49
SW49
PANEL R
D57
SW57
MUTE DOWN 3
D65
SW65
MUTE DOWN 1
D50
SW50
PANEL R
D58
SW58
MUTE UP 3
D66
SW66
MUTE UP 1
D51
SW51
PANEL R
D59
SW59
MUTE DOWN 4
D67
SW67
MUTE DOWN 2
D52
SW52
PANEL R
D60
SW60
MUTE UP 4
D68
SW68
MUTE UP 2
D53
SW53
PANEL R
D61
SW61
MUTE DOWN 7
D69
SW69
MUTE DOWN 5
D54
SW54
EXIT
D62
SW62
MUTE UP 7
D70
SW70
MUTE UP 5
D63
SW63
MUTE DOWN 8
D71
SW71
MUTE DOWN 6
D64
SW64
MUTE UP 8
D72
SW72
MUTE UP 6
D106
B3ABA0000360
PANEL MEMORY 4/8
D107
B3AAA0000471
PANEL MEMORY▲
D116
B3AAA0000471
SPLIT POINT C3
D117
B3AAA0000471
DISPLAY HOLD
D126
B3AAA0000471
DRUM KITS
D127
B3ABA0000360
MEMORY
D136
B3AAA0000471
SYNTH
D137
B3AAA0000471
SOUND EXPLORER
D154
B3AAA0000471
REVERS
R7
68
R8
68
R9
68
Q7
2SB621A-R
Q8
2SB621A-R
Q9
2SB621A-R
G
H
I

SCHEMATIC DIAGRAM-11

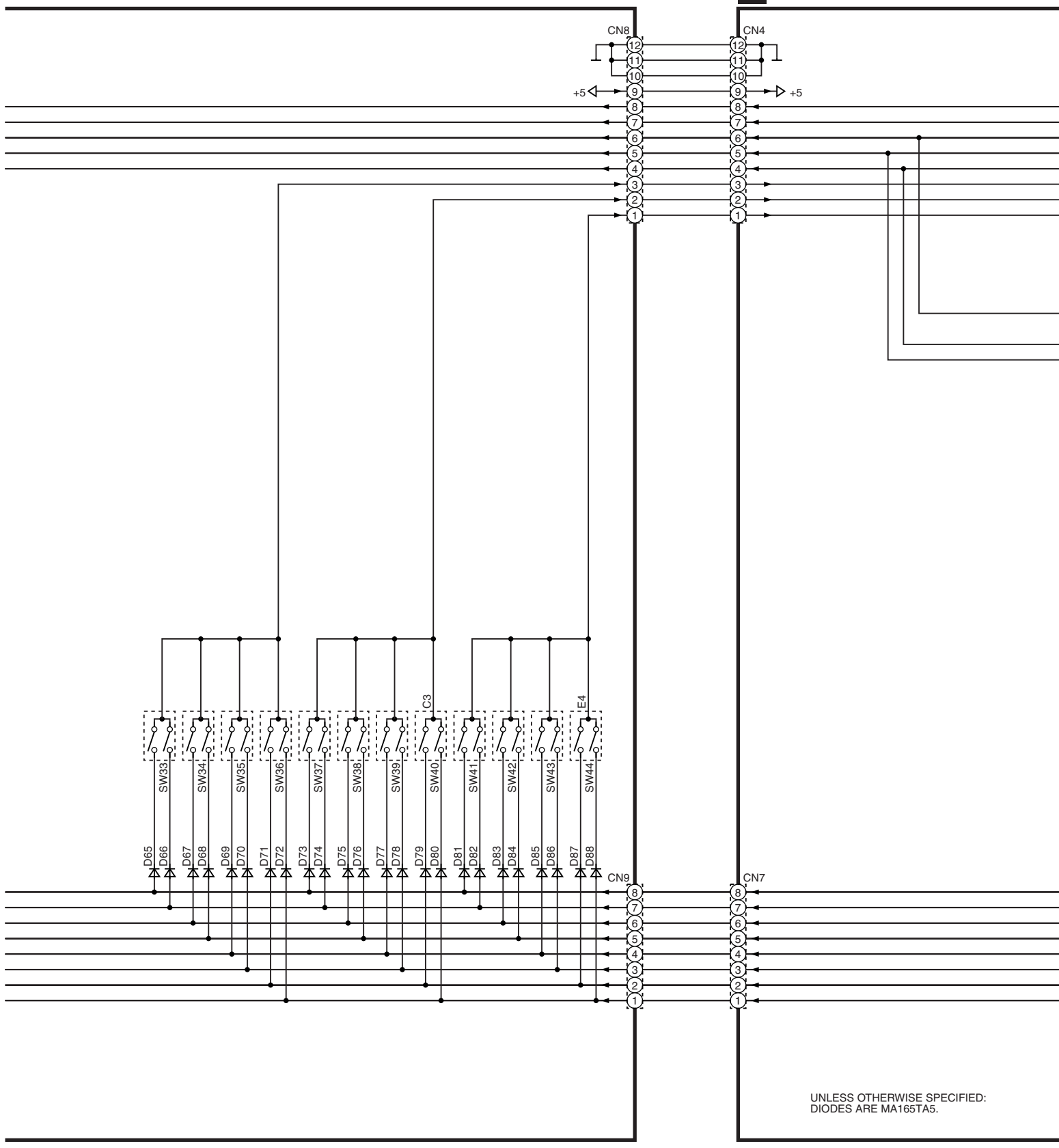
E MKB1 CIRCUIT



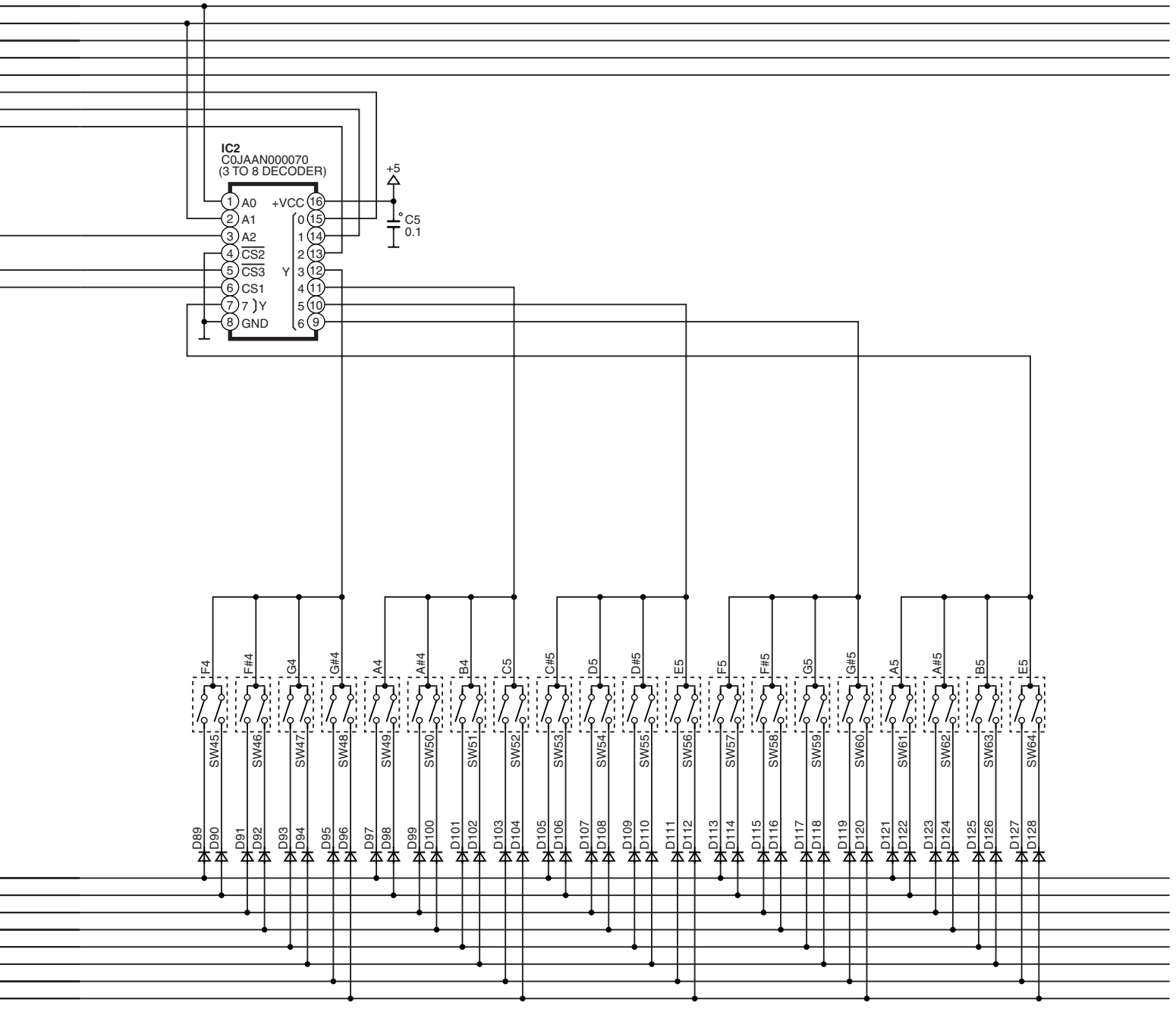

C1
C2
SW13
SW14
SW15
SW16
SW17
SW18
SW19
SW20
SW21
SW22
SW23
SW24
SW25
SW26
SW27
SW28
SW29
SW30
SW31
SW32
D25 D26
D27 D28
D29 D30
D31 D32
D33 D34
D35 D36
D37 D38
D39 D40
D41 D42
D43 D44
D45 D46
D47 D48
D49 D50
D51 D52
D53 D54
D55 D56
D57 D58
D59 D60
D61 D62
D63 D64

SCHEMATIC DIAGRAM-12

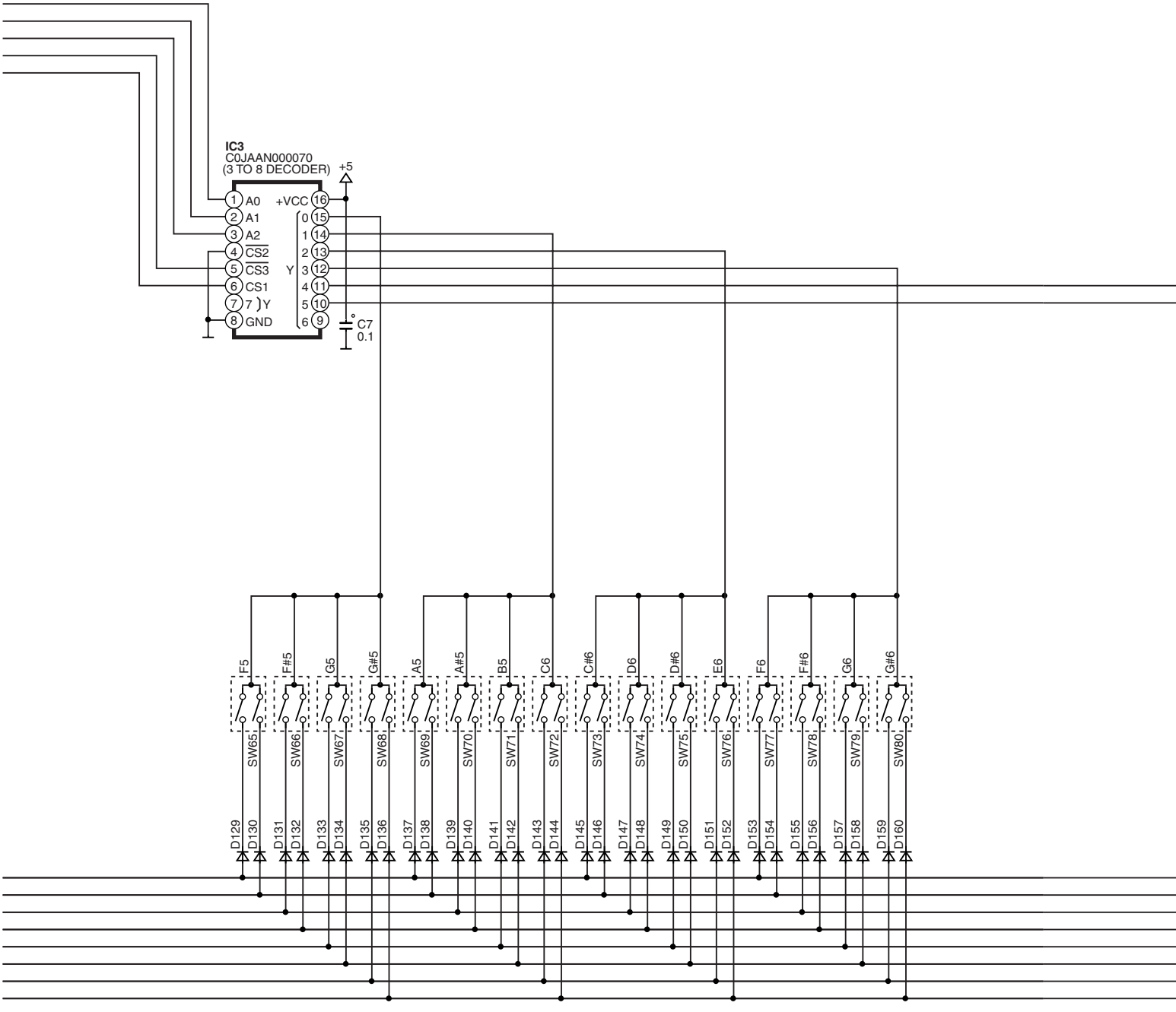
F MKB2 CIRCUIT

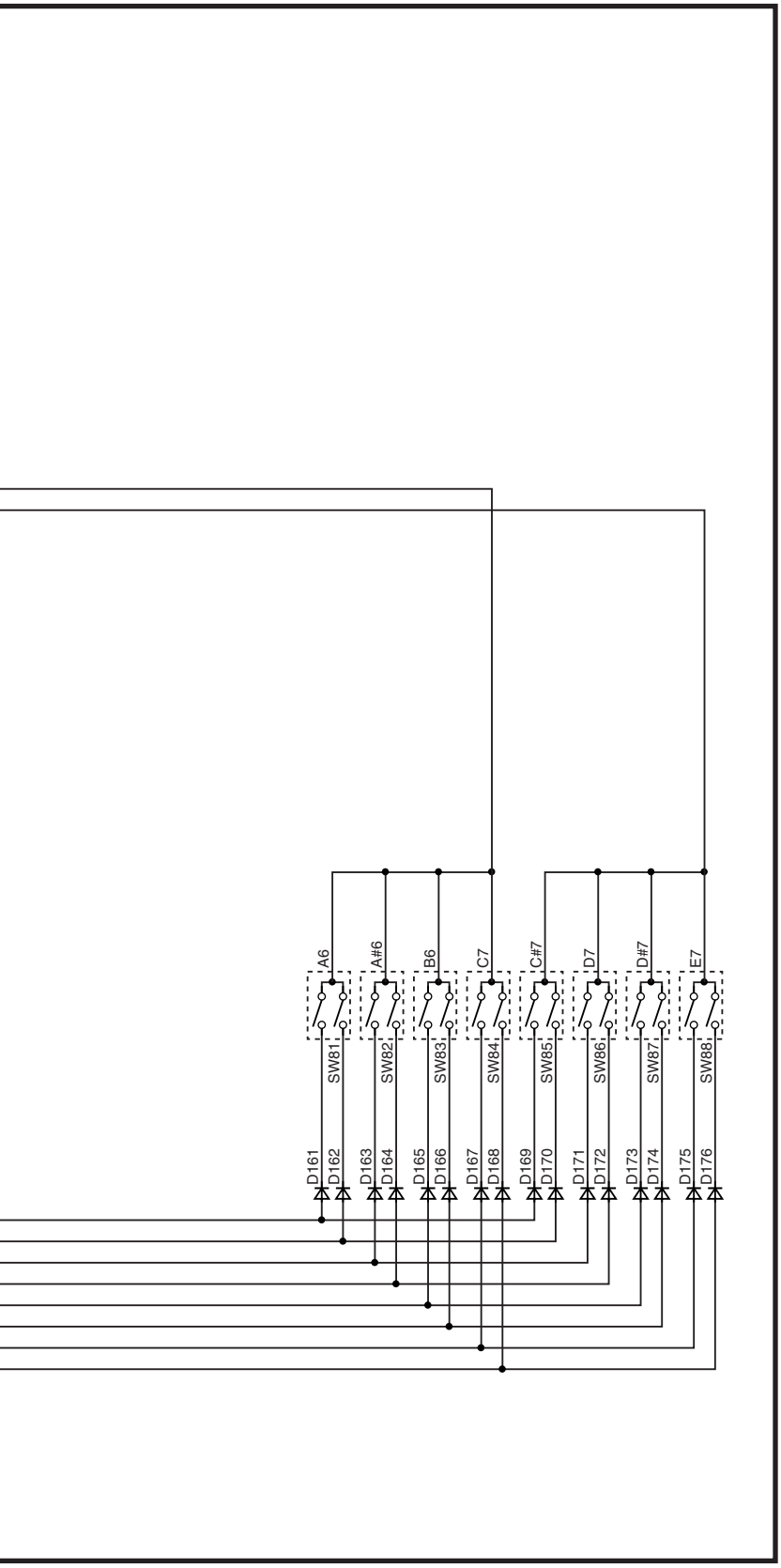


UNLESS OTHERWISE SPECIFIED:
DIODES ARE MA165TA5.


IC2
C0JAAN000070
(3 TO 8 DECODER)
A0
A1
A2
CS2
CS3
CS1
7
GND
+VCC
Y
+5
C5
0.1
F4
F#4
G4
G#4
A4
A#4
B4
C5
C#5
D5
D#5
E5
F5
F#5
G5
G#5
A5
A#5
B5
E5
SW45
SW46
SW47
SW48
SW49
SW50
SW51
SW52
SW53
SW54
SW55
SW56
SW57
SW58
SW59
SW60
SW61
SW62
SW63
SW64
D89
D90
D91
D92
D93
D94
D95
D96
D97
D98
D99
D100
D101
D102
D103
D104
D105
D106
D107
D108
D109
D110
D111
D112
D113
D114
D115
D116
D117
D118
D119
D120
D121
D122
D123
D124
D125
D126
D127
D128

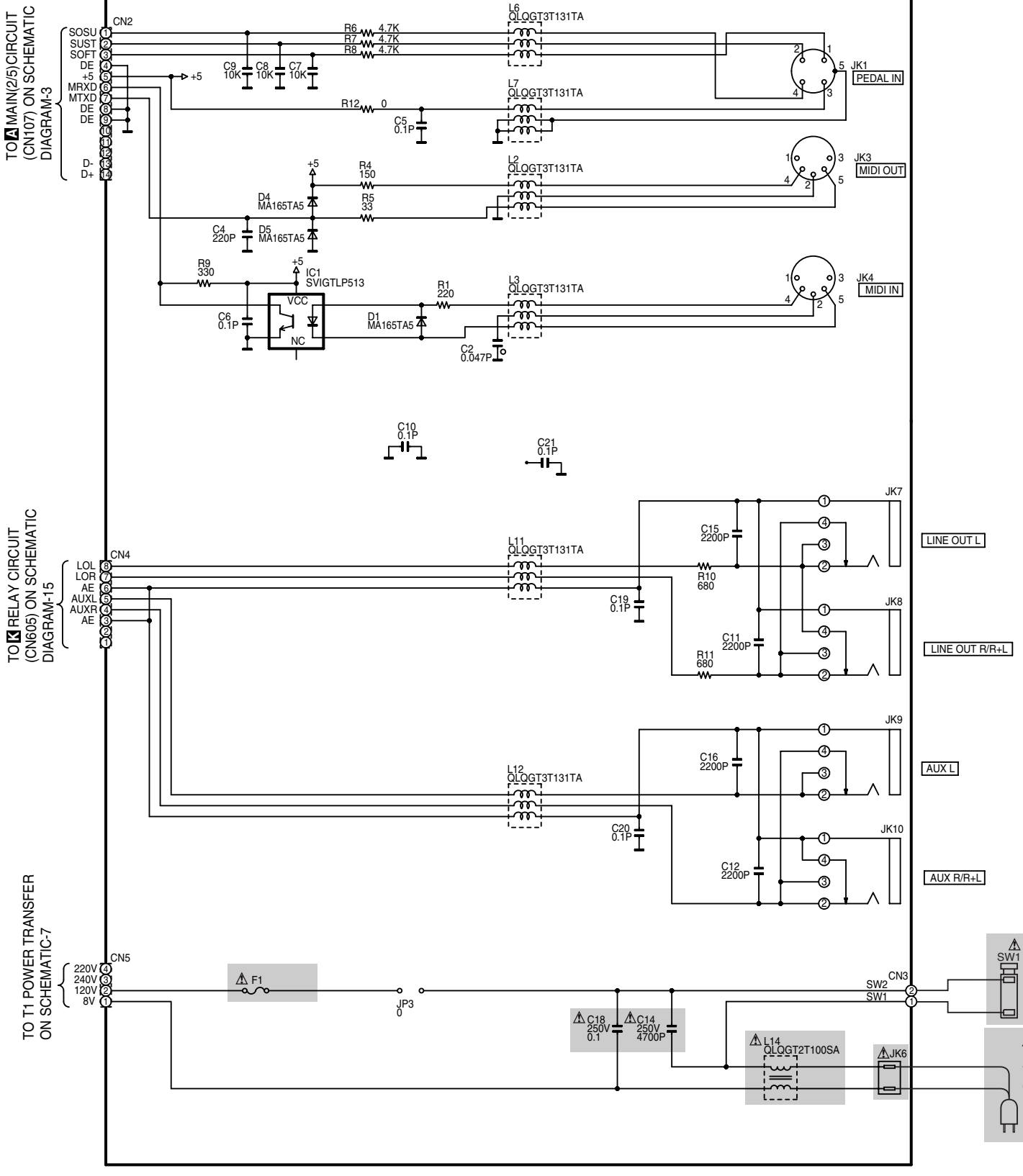
SCHEMATIC DIAGRAM-13



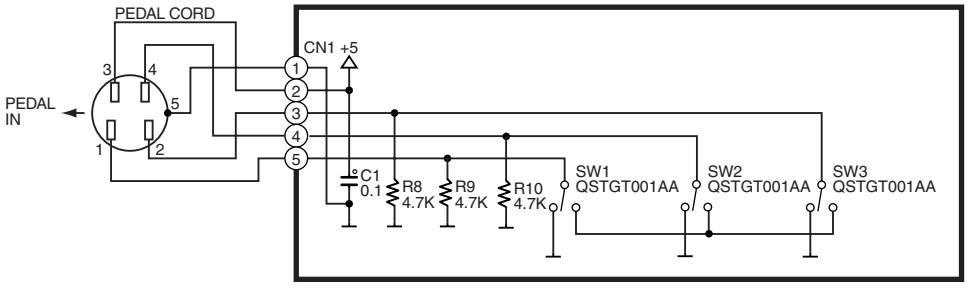

A6
A#6
B6
C7
C#7
D7
D#7
E7
SW81
SW82
SW83
SW84
SW85
SW86
SW87
SW88
D161
D162
D163
D164
D165
D166
D167
D168
D169
D170
D171
D172
D173
D174
D175
D176

SCHEMATIC DIAGRAM-14

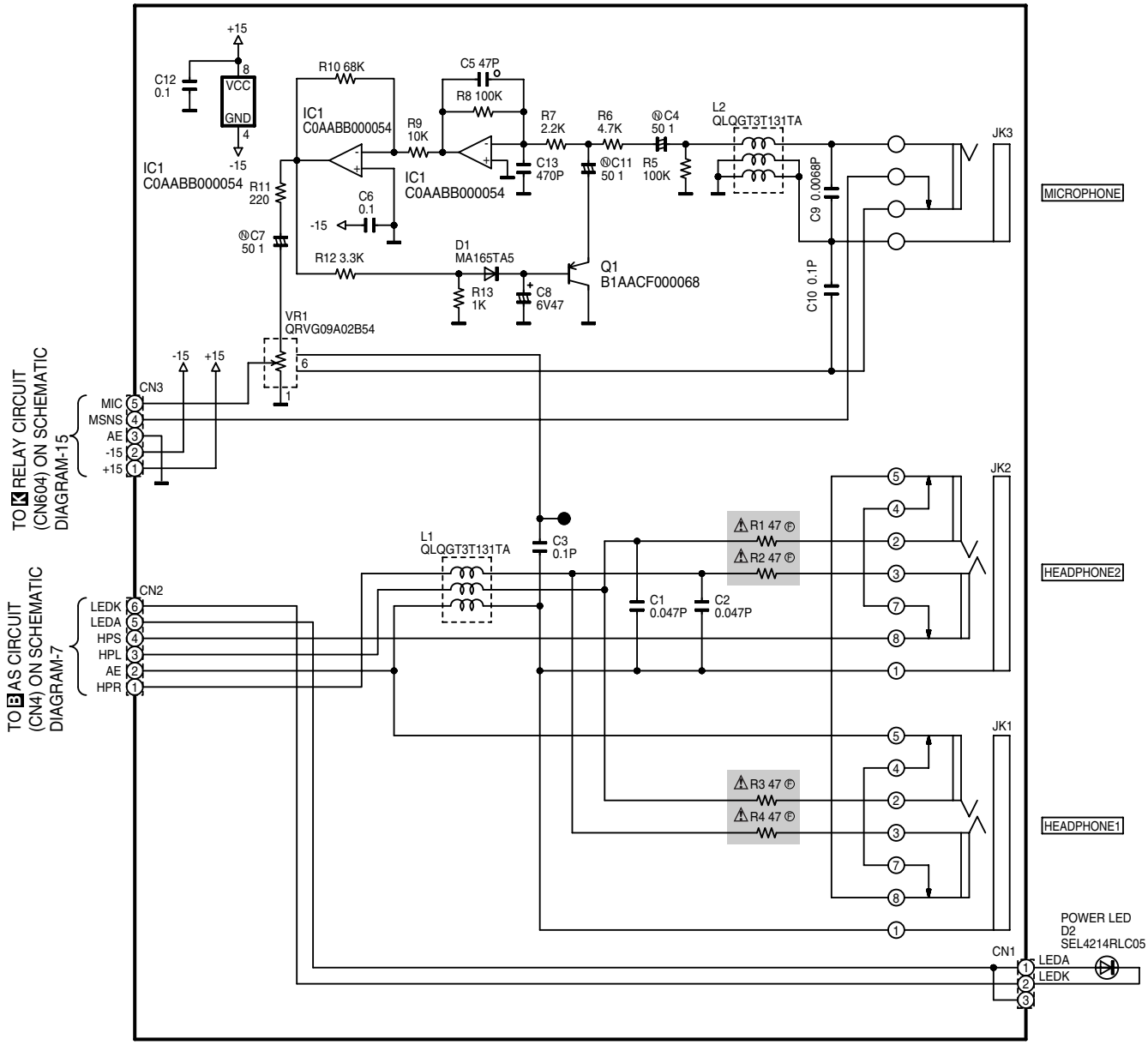
H JACK CIRCUIT



G PKB CIRCUIT



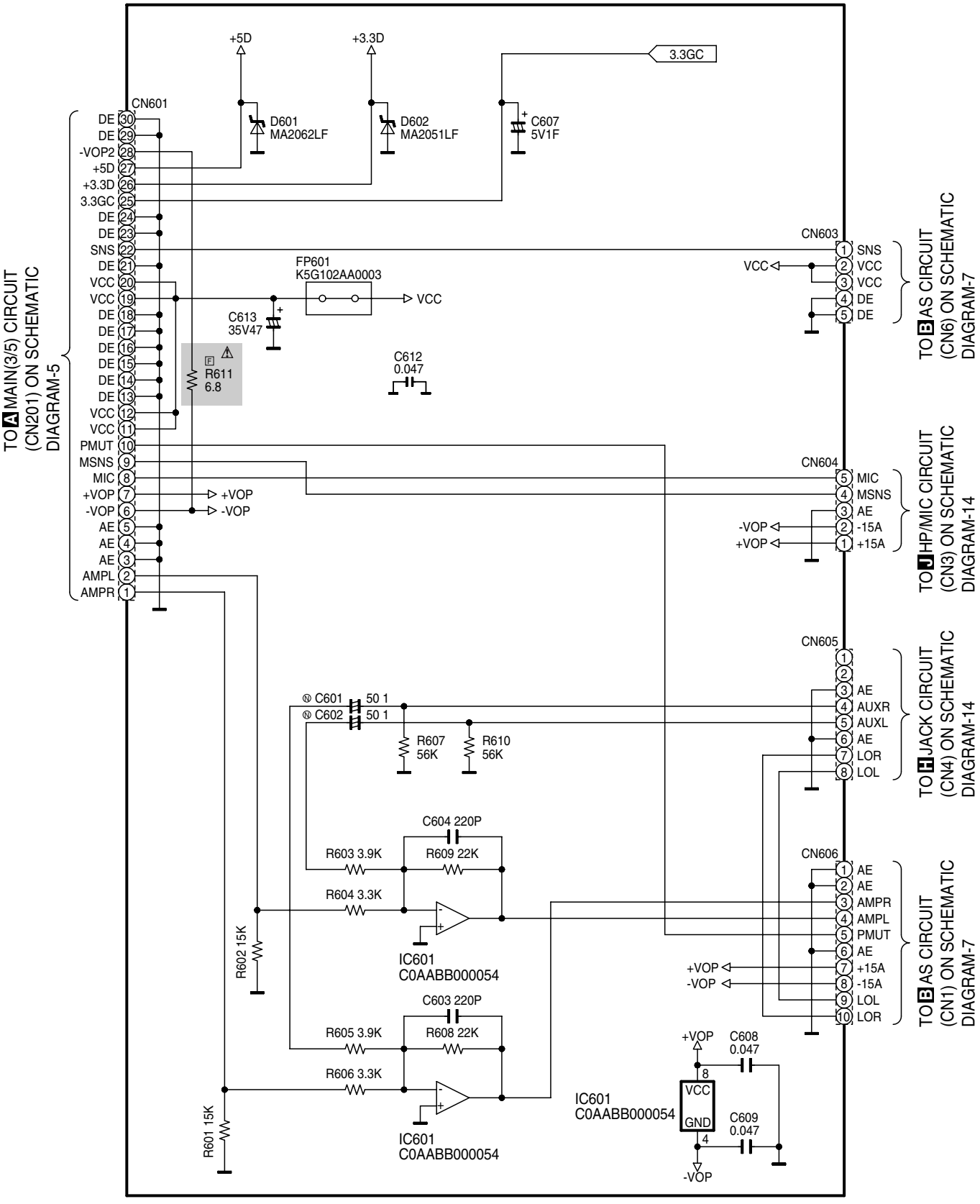
J HP/MIC CIRCUIT



SW1

PC1 AC POWER CORD

K RELAY CIRCUIT



(CNT) ON SCHEMATIC DIAGRAM-7

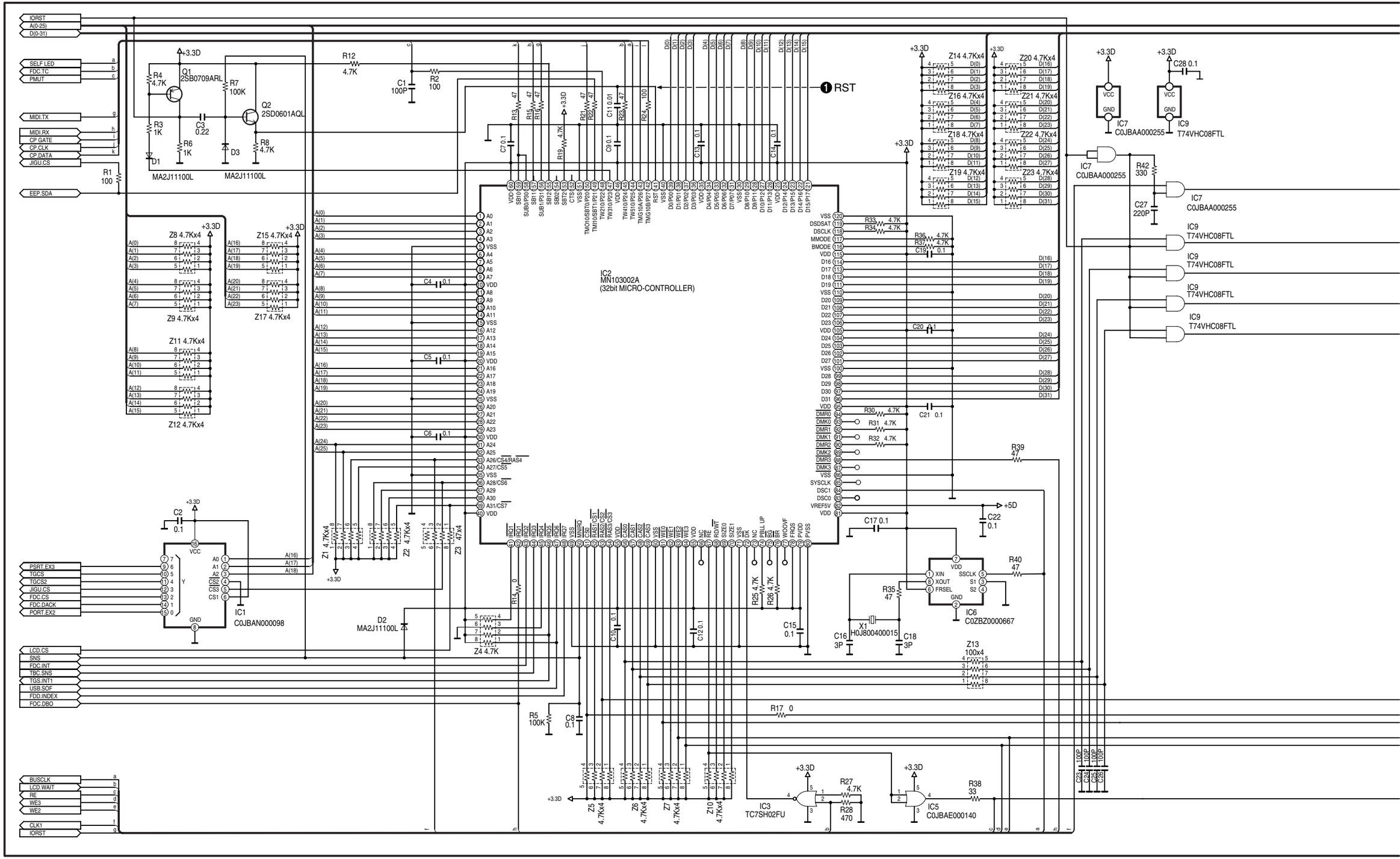
(CNT) ON SCHEMATIC DIAGRAM-14

(CNS) ON SCHEMATIC DIAGRAM-14

(CNS) ON SCHEMATIC DIAGRAM-7

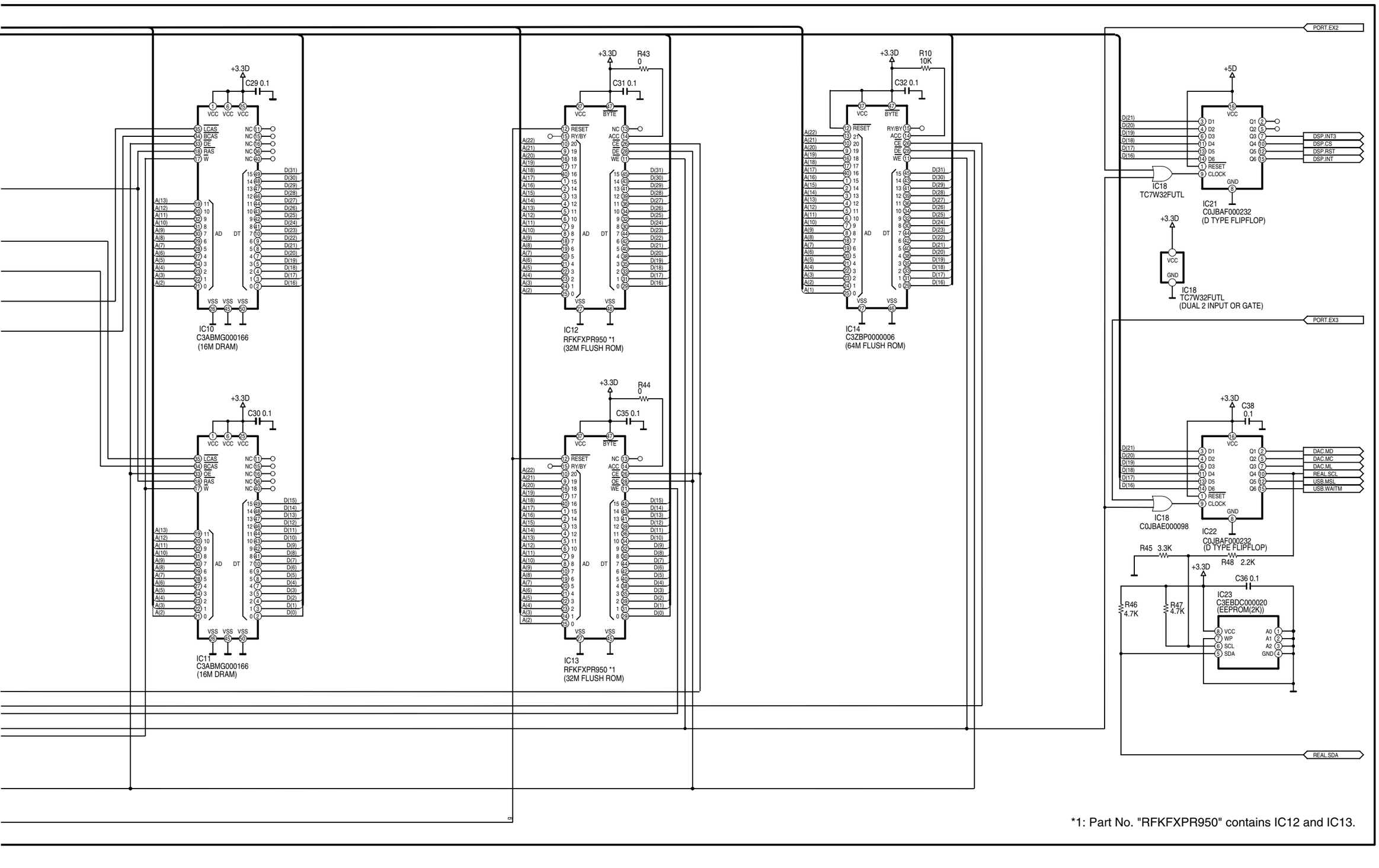
SCHEMATIC DIAGRAM-1

A MAIN 1/4 CIRCUIT



SX-PR950 MAIN 1/4 SCHEMATIC DIAGRAM (1/2)

SCHEMATIC DIAGRAM-2



*1: Part No. "RFKFXPR950" contains IC12 and IC13.

SCHEMATIC DIAGRAM-3

A MAIN 2/4 CIRCUIT

TO H JACK CIRCUIT (CN2) ON SCHEMATIC DIAGRAM-14

TO C CPL, D CPR CIRCUIT (CN1) ON SCHEMATIC DIAGRAM-8, 9

CN107 SOSU SUST SOFT DE CPRST MRXD MTXD DE DE DE DE D- D+

CN105 +5D DATA CLK DE RST

TO FDD: CN101 DE DE +5D DCH SIDE RDT WPRT TRKO WGA WDT STEP DIR MOT DSB IP

Z103 1Kx4 (R104 1K) Z101 47x4 (R101 47, R102 47, R103 47) Z102 47x4

C101 0.1, C102 220P, C103 220P, C104 220P, C105 220P, C106 220P, C107 220P

IC102 C1DB00000607 (FLOPPY DISC CONTROLER)

MEDIA IO0, MEDIA IO1, VDATA, VGATE, HDSEL, VSS, STEP, VCC, DIR, MTR#/IDLE, DSI/PO, MTR0

DENSEL, DRVDEN1, DRVDEN0, RDATA#, DSKCHG, VCC, VSS, WRVRFY, INDEX#, TRK0#, TC#, IRQ

C112 0.1, C115 0.1, C117 0.1, C118 220P, R119 100

Z107 100x4 D(23) D(22) D(21) D(20)

Z108100x4 D(19) D(18) D(17) D(16)

IC101 C0JBAB000180

OSD RESET X2(0) X1(1) VSS A2 A1 A0 CS IOR IOW ORQ

A(3) A(2) A(1)

R109 1M, C113 100P, R108 220

IC101 C0JBAB000180 (+3.3D, C108 0.1, VCC, GND)

R105 1M, R107 47, X101 HOJ240500016, C109 10P, C111 10P

-20V R140 10K, +5D R142 47K, R143 2.2K, R141 22K

Q107 2SD0601AQL, Q108 2SB0709ARL

R139 2.2K, C114 50V1, R114 22K

+5D C119 0.1, C120 0.1

Z105 4.7Kx4, R145 4.7K, Z106 4.7Kx4

IC104 C0HBA0000134 (LCD CONTROLLER)

VSS NC NC VDD UD7 UD6 UD5 UD4 UD3 UD2 UD1 UD0 FLM LP CP VSS

VSS MIOCS NHWR MLWR MRD NMCS MWAIT VDD MPUCLK VSS MRESET MPUSEL VSS NBNE A0 A1 A2 A3 A4 A5 A6 A7 VDD VSS

VSS A8 A9 A10 A11 A12 A13 A14 SWAP VDD VSS CSE NC NC NC VSS

I J K L M N O

C128 0.1, C123 0.1, C122 100p, C121 0.1

A B C D E F G H

f e d c b a Z YS X W V U T R Q

CN103 FRM LOAD CP M VLCD VDD VSS VEE D0 D1 D2 D3 DOFF NC

TO LCD

JP102 0, C110 0.1

R110 330, R111 330, R112 330, R144 330, R113 330

Z104 220x4

D101 MA2J11100L, R117 120K, C116 50V1

IC103 T74VHCT541FT (BUS DRIVER)

C124 0.1, C129 0.1

+5D R120 47, R122 4.7K, R123 4.7K, R121 47

C125 0.1, C126 47P, C127 47P

IC105 C0JBAZ001264 (DUAL 3 STATE BUFFER)

IC107 C0JBAZ001264 (DUAL 3 STATE BUFFER)

+3.3D R126 4.7K, R127 4.7K

FDC DRQ, FDC TC, FDC INT, FDC DACK, FDC CS

R124 10K, C130 0.01, R125 100

IC106 TS7S14F (SCHMITT TRIGGER INVERTER)

TOC.SNS, CP.CLK, CP.DATA, CP.GATE

Q103 UN511NTX, R128 4.7K, Q104 UN5216, IORST

C132 0.1, CPRST

C133 100p, C134 100p, C135 100p, C136 100p

C131 0.1, R129 47

Z109 47Kx4, Z110 4.7Kx4, Z111 4.7Kx4, Z112 47Kx4

SD.WP, SD.BUSY, SD.SI

R130 0

2SB0709ARL Q106, IC108 C0UBAA000115

R137 4.7K, R134 4.7K, R132 4.7K, R135 4.7K

IC109 C0JBAZ000853 (16BIT BUS BUFFER)

C137 0.1, VCC(3.3V), GND

CN110 +5D +3.3D +3.3D JIGU.CS JIGU.SD JIGU.CLK JIGU.SI JIGU.ON SNS DE DE

SNS JIGU.SI JIGU.CLK JIGU.SD JIGU.CS

D(0-31) MIDI.TX

MIC.SNS MIDI.RX DSP EMPTY DSP DRDY

A B C D E F G H I

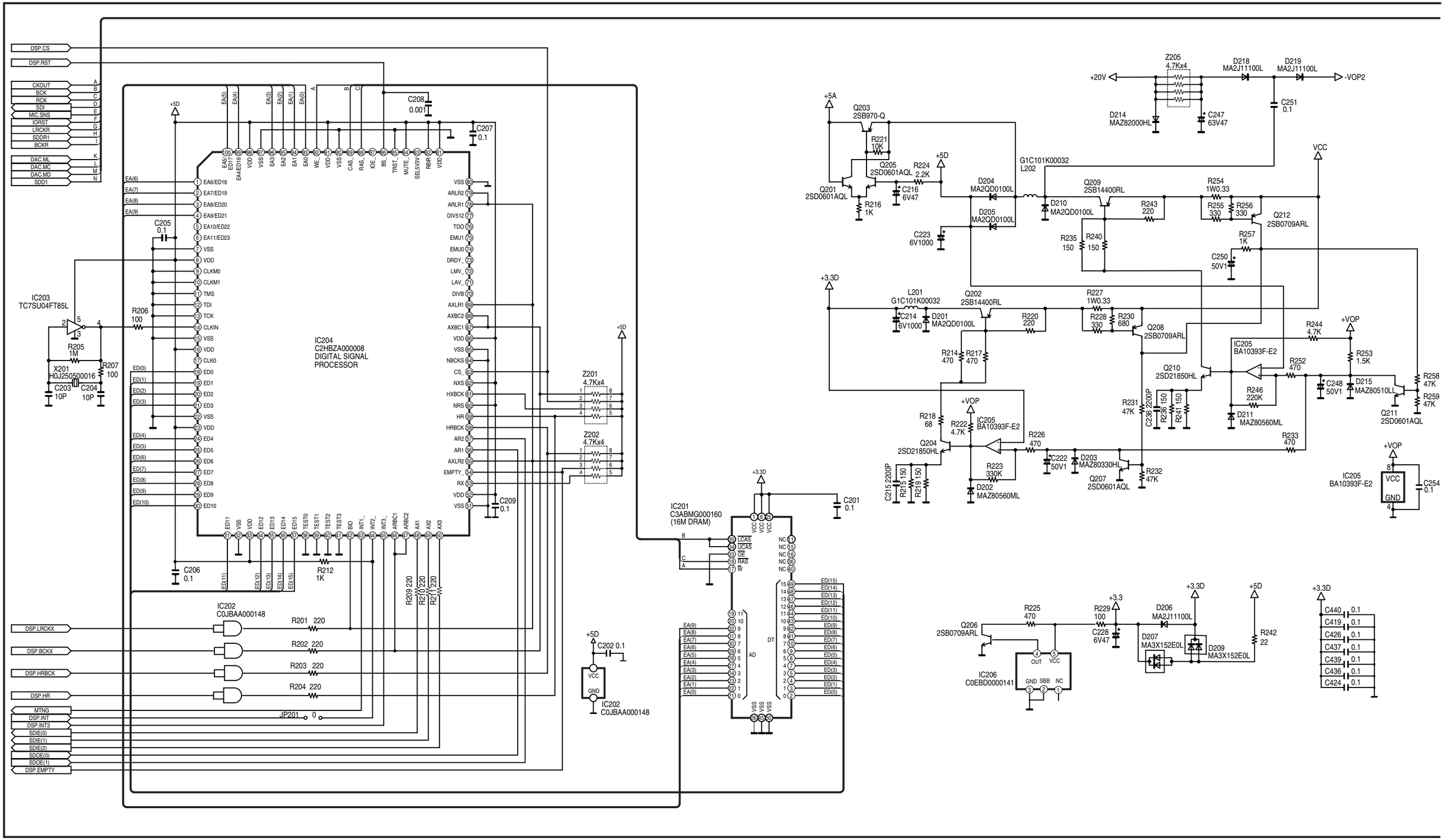
LCD.IOCS WE3 WE2 RE LCD.CS CD.WAIT BUSCLK PWM IRQ0

A(0-24)

SX-PR950 MAIN 2/4 SCHEMATIC DIAGRAM

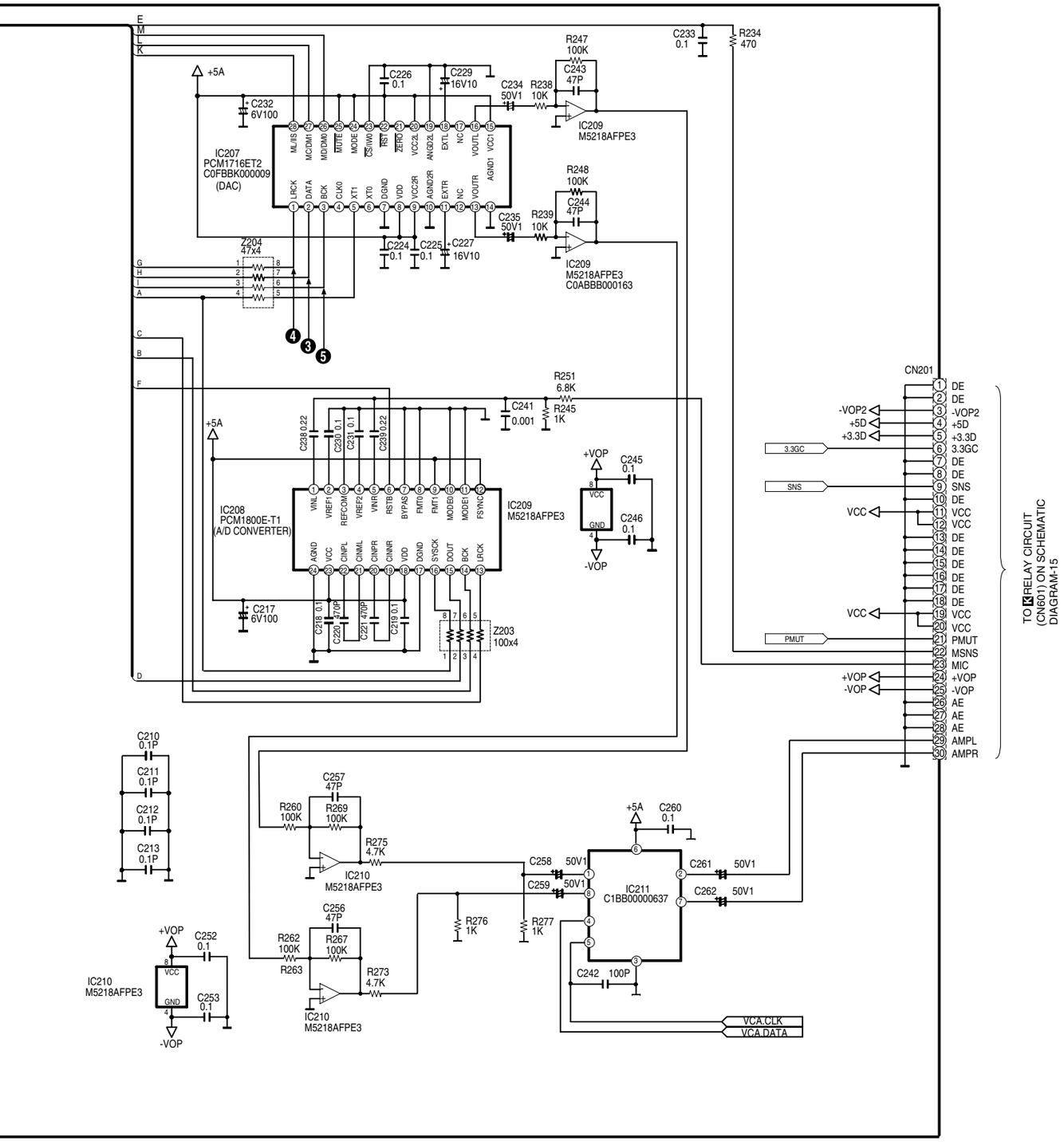
SCHEMATIC DIAGRAM-4

A MAIN 3/4 CIRCUIT



SX-PR950 MAIN 3/4 SCHEMATIC DIAGRAM (1/2)

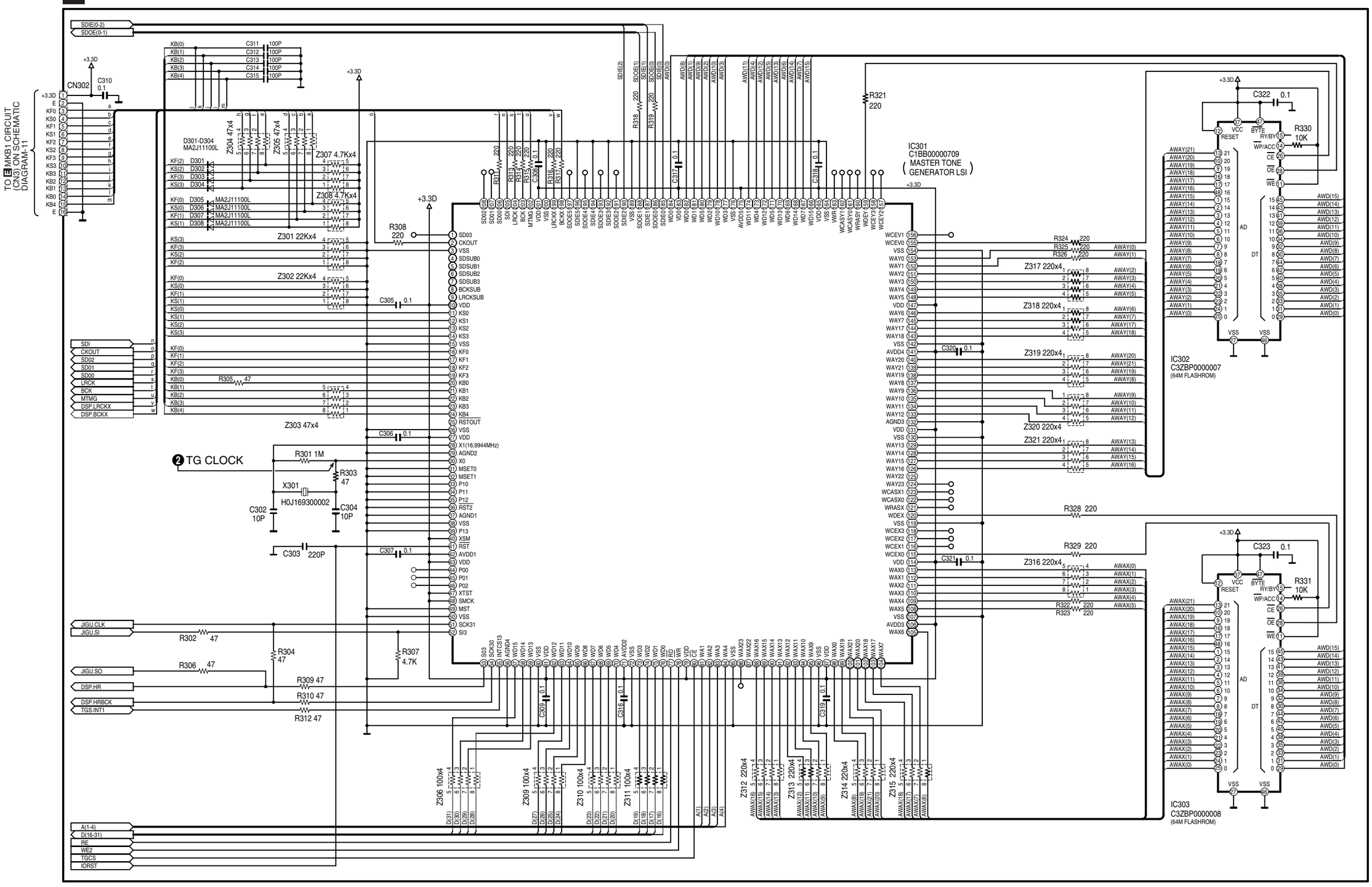
SCHEMATIC DIAGRAM-5



SX-PR950 MAIN 3/4 SCHEMATIC DIAGRAM (2/2)

SCHEMATIC DIAGRAM-6

A MAIN 4/4 CIRCUIT



SX-PR950 MAIN 4/4 SCHEMATIC DIAGRAM

SCHEMATIC DIAGRAM-7

B AS CIRCUIT

T1 POWER TRANSFORMER
220V
240V
120V
0V
BLUE
BLACK
BLUE
20V
0V
20V
CN5
TO E JACK CIRCUIT (CN5) ON SCHEMATIC DIAGRAM-14

D1 ERA1502V5
D2 ERA1502V5
D4 SVDS3V40
D6 SVDS3V40
D9 SVDS3V40
D7 SVDS3V40
+VCC
-VCC
C29 35V4700
C32 35V3300
C36 0.1
C37 0.1
C38 16V100
C39 16V330
R56 6.8
R57 6.8
R118 6.8

IC1 M5F78M15L (+15 VOLTAGE REGULATOR)
IC2 M5F79M15L (-15 VOLTAGE REGULATOR)
D12 MA4180TA
D11 MA4180TA
+15
+15M
-15
-15M
R61 4.7K
R58 10K
R59 10K
R60 10K
R62 4.7K
Q6 2SA1015TPE2
Q5 2SA1015TPE2
Q7 2SC1815TPE2
Q13 2SA1015TPE2
R83 10K
D16 EK04W
R85 3.3K
R84 47K
Q12 2SC1815TPE2

CN6
E
E
+VCC
+VCC
SNS
TO K RELAY CIRCUIT (CN603) ON SCHEMATIC DIAGRAM-15
R52 10K
R53 10K
R55 1/4W2
R54 1/4W2
+VCC
1 SNS

R81 100K
R79 0
Q11 2SC1815TPE2
R78 0
Q22 2SA1015TPE2
R80 10K
PMUT
2 PMUT
D15 MA165TA5
HPS

RO
R41 330K
C25 10P
R42 330K
+15HM
C91 0.1
R43 22
R49 2.2K
Q1 2SD0592ARA
Q2 2SB621A-R
IC9 C0AABB000054 (EQUALIZING)
C92 0.1
R46 22
R48 2.2K
Q3 2SD0592ARA
Q4 2SB621A-R
R47 330K
C26 10P
R45 330K
LO
R50 1/4W22
R201 1/4W4.7
HPR
8 HPR
R202 1/4W4.7
7 HPL
HPL
R51 1/4W22
-15

CN1
LOR 1 HPR
LOL 2 HPL
-15 3 -15
+15 4 +15
E 5
PMUT 6 PMUT
AMPL 7
AMPR 8
E 9
E 10
TO K RELAY CIRCUIT (CN606) ON SCHEMATIC DIAGRAM-15

CN4
HPR 1
AE 2
HPL 3
HPS 4
LEDA 5
LEDK 6
TO J HP/MIC CIRCUIT (CN2) ON SCHEMATIC DIAGRAM-14
L1 150uHx3
R39 3.3K
HPS
+15
L4 QLQGT1B800MB

LO
5 AMPL
R9 10K
C7 0.1
C10 0.1
R11 6.8K
R14 68K
R18 47K
R19 47K
C23 0.033
C24 0.022
R33 47K
R35 12K
C21 0.001
R34 10K
IC6 C0AABB000054 (EQUALIZING)
C8 0.0047
R12 2.7K
C11 47P
R15 33K
IC5 C0AABB000054 (EQUALIZING)
R21 12K
C22 0.0068
R22 22K

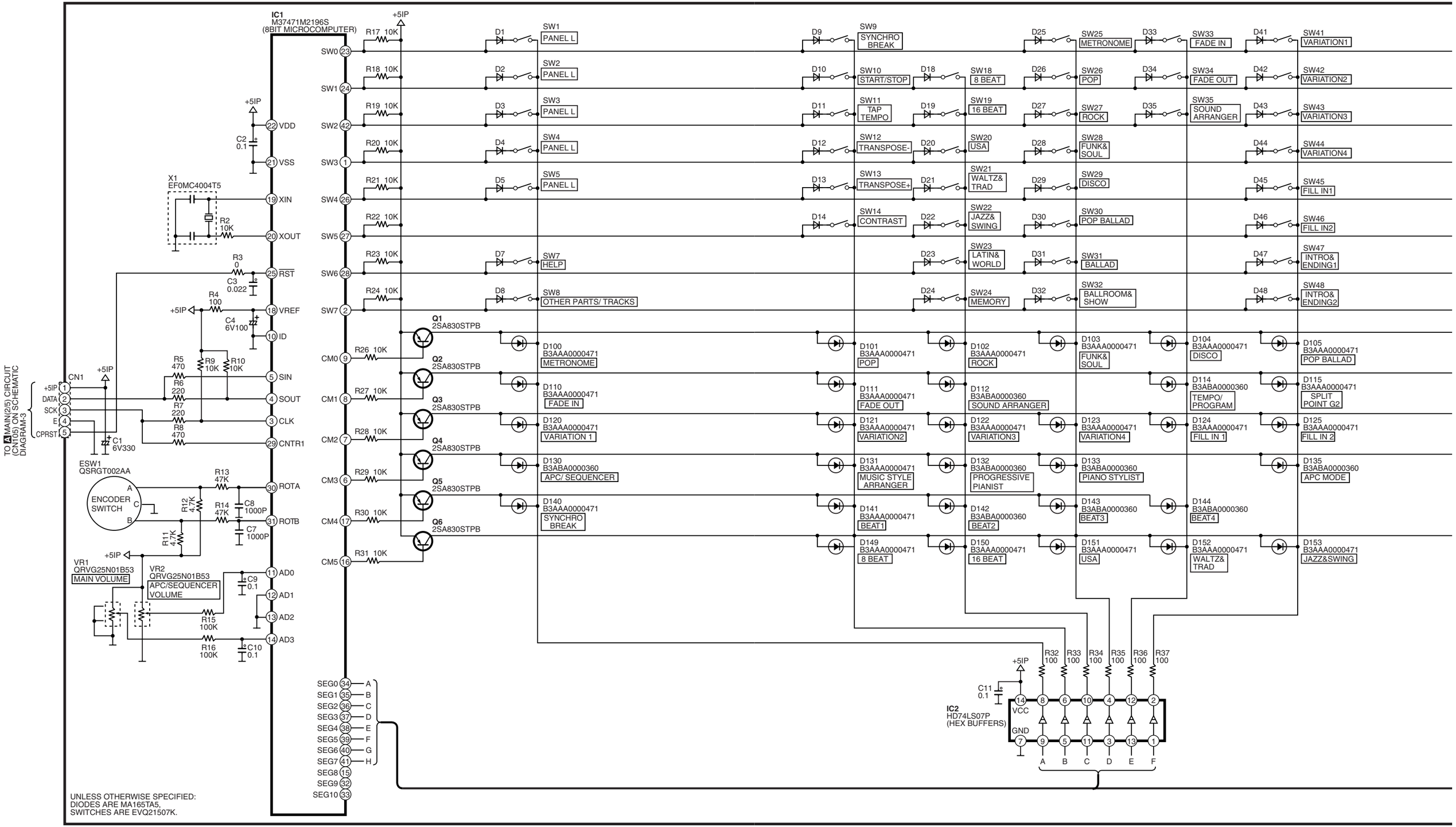
RO
6 AMPR
R10 10K
C12 0.1
C13 0.1
R13 6.8K
R16 68K
R25 47K
R26 47K
C17 0.033
C18 0.022
R38 12K
R37 10K
IC7 C0AABB000054 (EQUALIZING)
C14 0.0047
R28 2.7K
C16 47P
R27 33K
R31 12K
C20 0.0068
C19 0.001
R32 22K
IC8 C0AABB000054 (EQUALIZING)
R36 47K

C54 0.47
R104 10K
R101 680K
+15M
R106 2.2K
R110 1K
R108 1.69K
D27 MA29W-A
D28 MA29W-A
R105 1K
R109 1K
R107 2.2K
Q18 2SC1815TPE2
Q19 2SA1015TPE2
R114 1/4W100
R111 1/4W100
Q20 B1BCEJ000004
Q21 B1BAEJ000008
C55 0.022
R112 330
R113 330
R116 330
F4
R115 1/4W4.7
C56 0.1
3 SPL
+15M
D33 EK04W
IC10 C0AABB000054 (EQUALIZING)
R91 2.2K
R94 1K
R93 1.69K
D19 MA29W-A
D20 MA29W-A
R90 1K
R95 1K
R92 2.2K
Q14 2SC1815TPE2
Q15 2SA1015TPE2
R96 1/4W100
R97 1/4W100
Q16 B1BCEJ000004
Q17 B1BAEJ000008
C50 0.022
R98 330
R99 330
R117 330
F5
C49 0.47
R89 10K
R86 680K
4 SPR
C51 0.1
R100 1/4W4.7

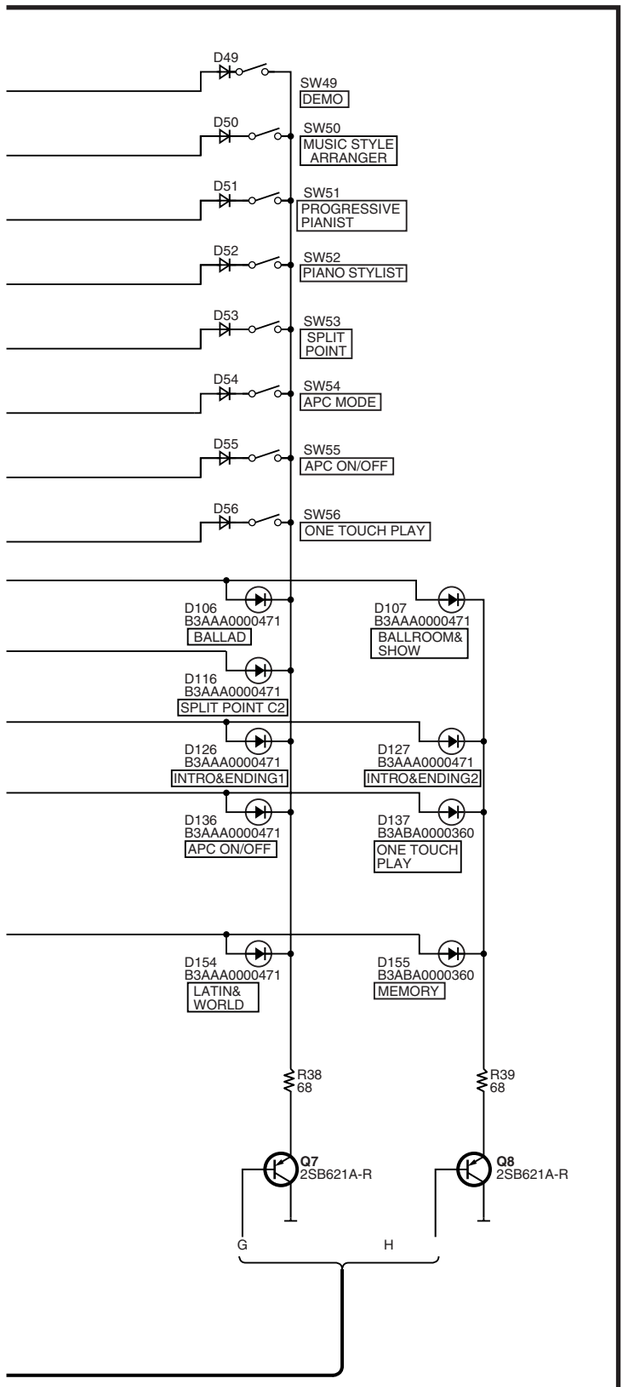
CN9
C61 1
C62 1
SPTL 6.5cm,8Ω
SPTR 6.5cm,8Ω
CN10
SPL 14cm,6Ω
SPR 14cm,6Ω

SCHEMATIC DIAGRAM-8

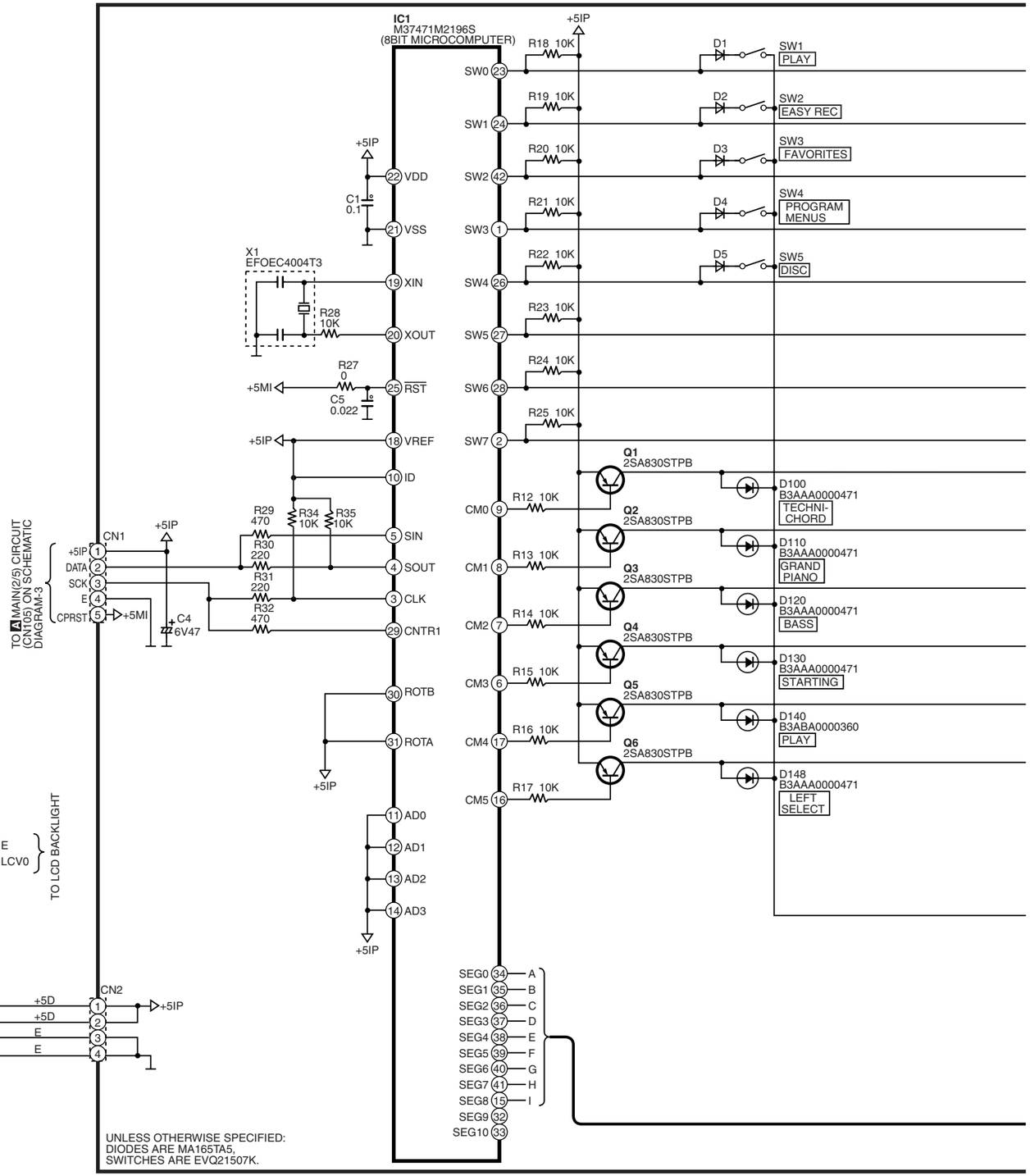
C CPL CIRCUIT



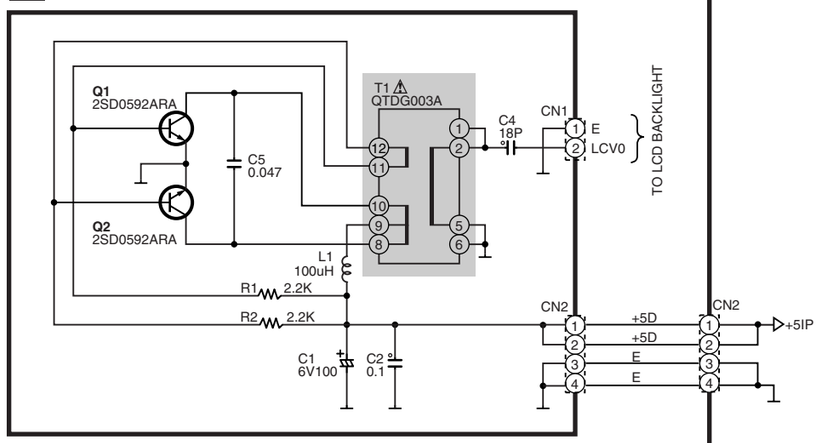
SCHEMATIC DIAGRAM-9



D CPR CIRCUIT

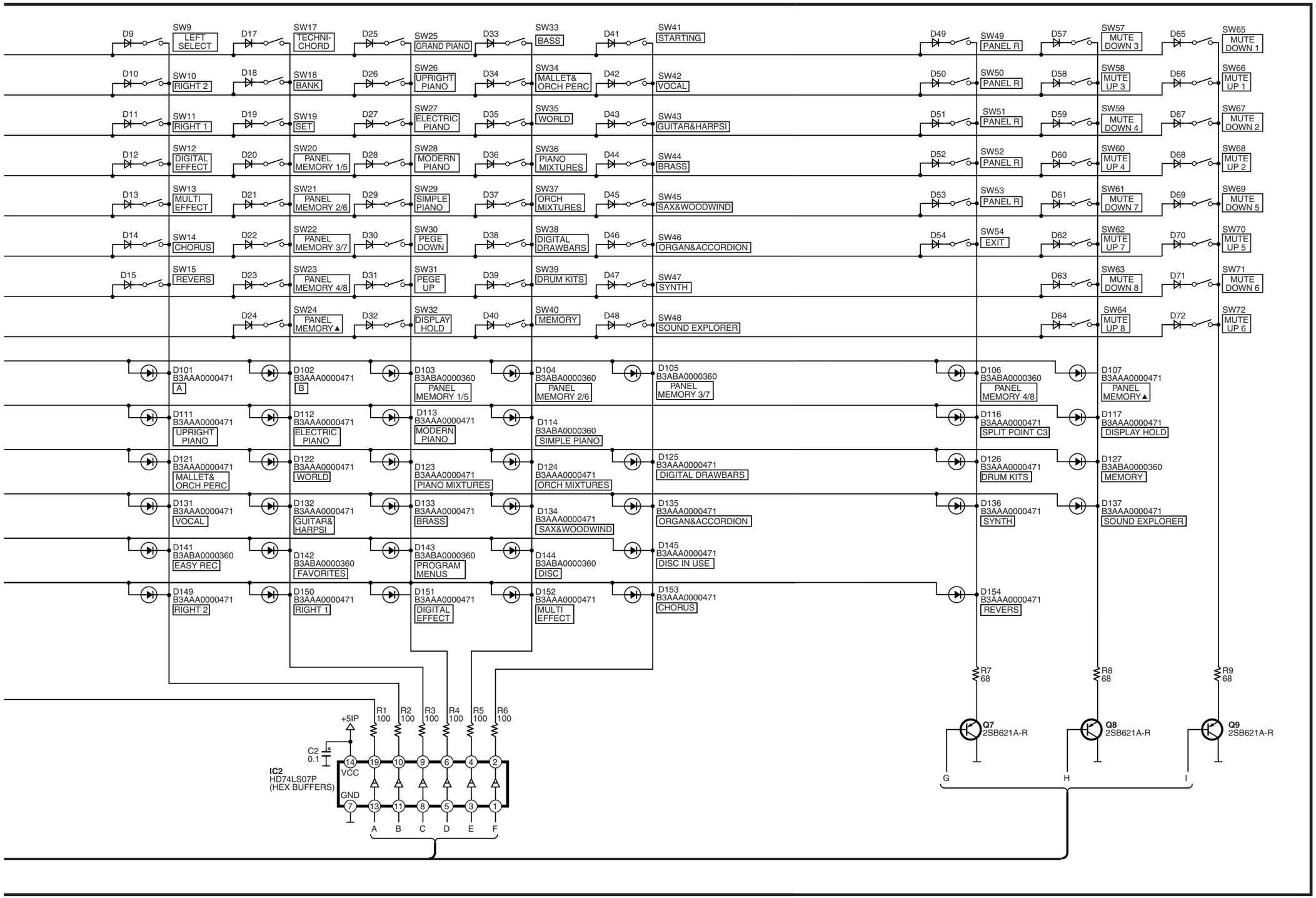


I INV CIRCUIT



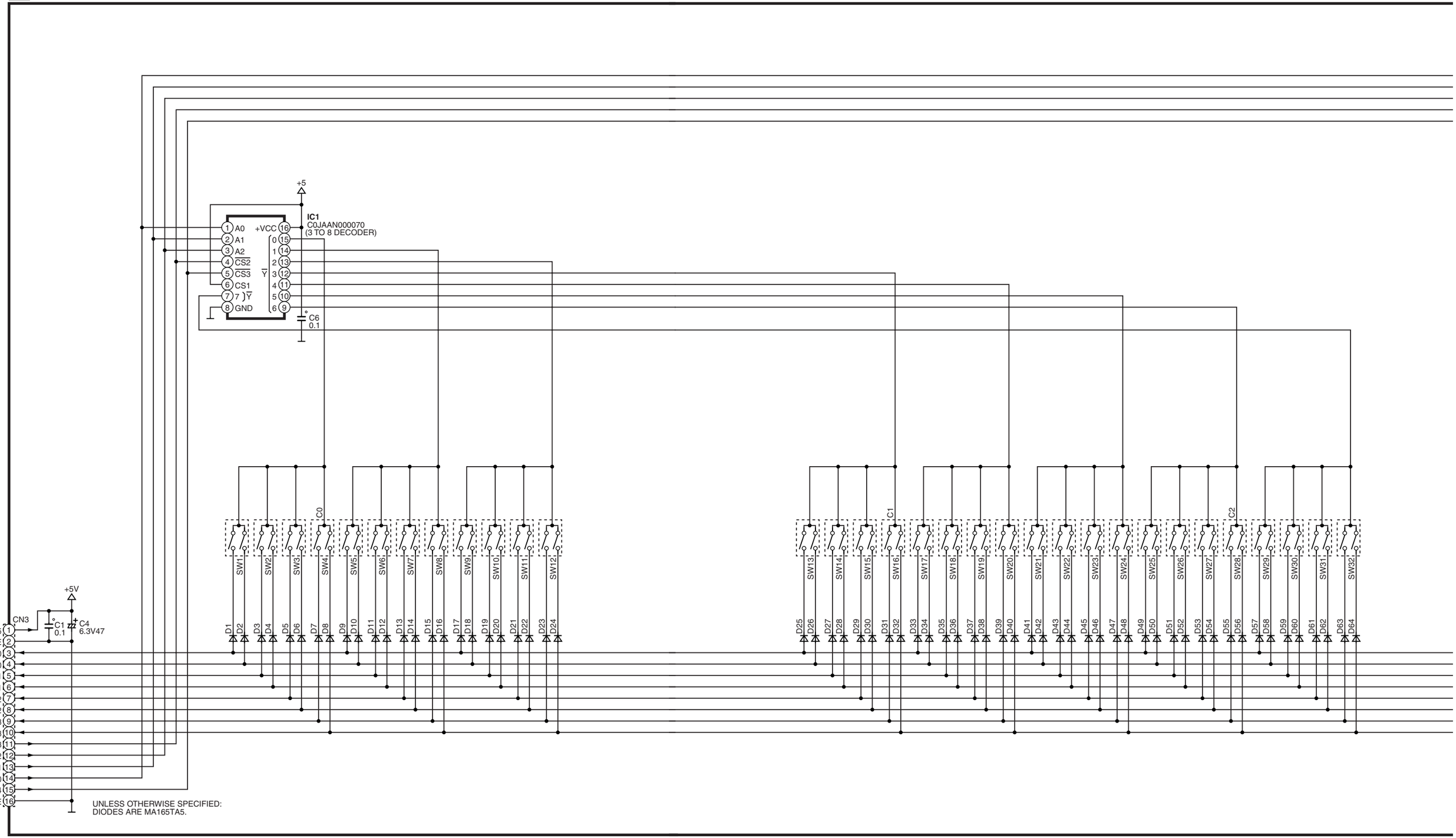
SX-PR950 CPL (2/2), INV, CPR (1/2) SCHEMATIC DIAGRAM

SCHEMATIC DIAGRAM-10



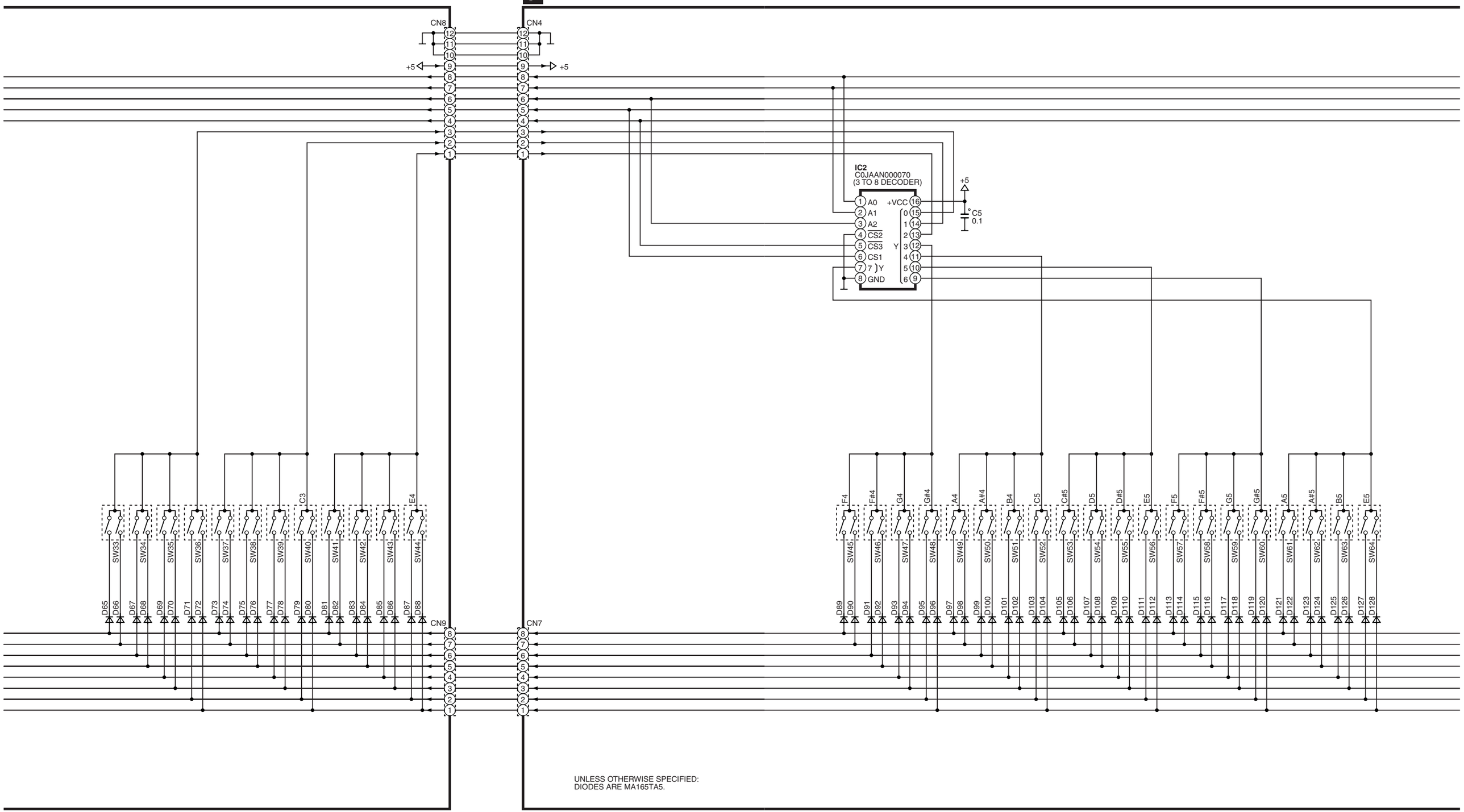
SCHEMATIC DIAGRAM-11

E MKB1 CIRCUIT



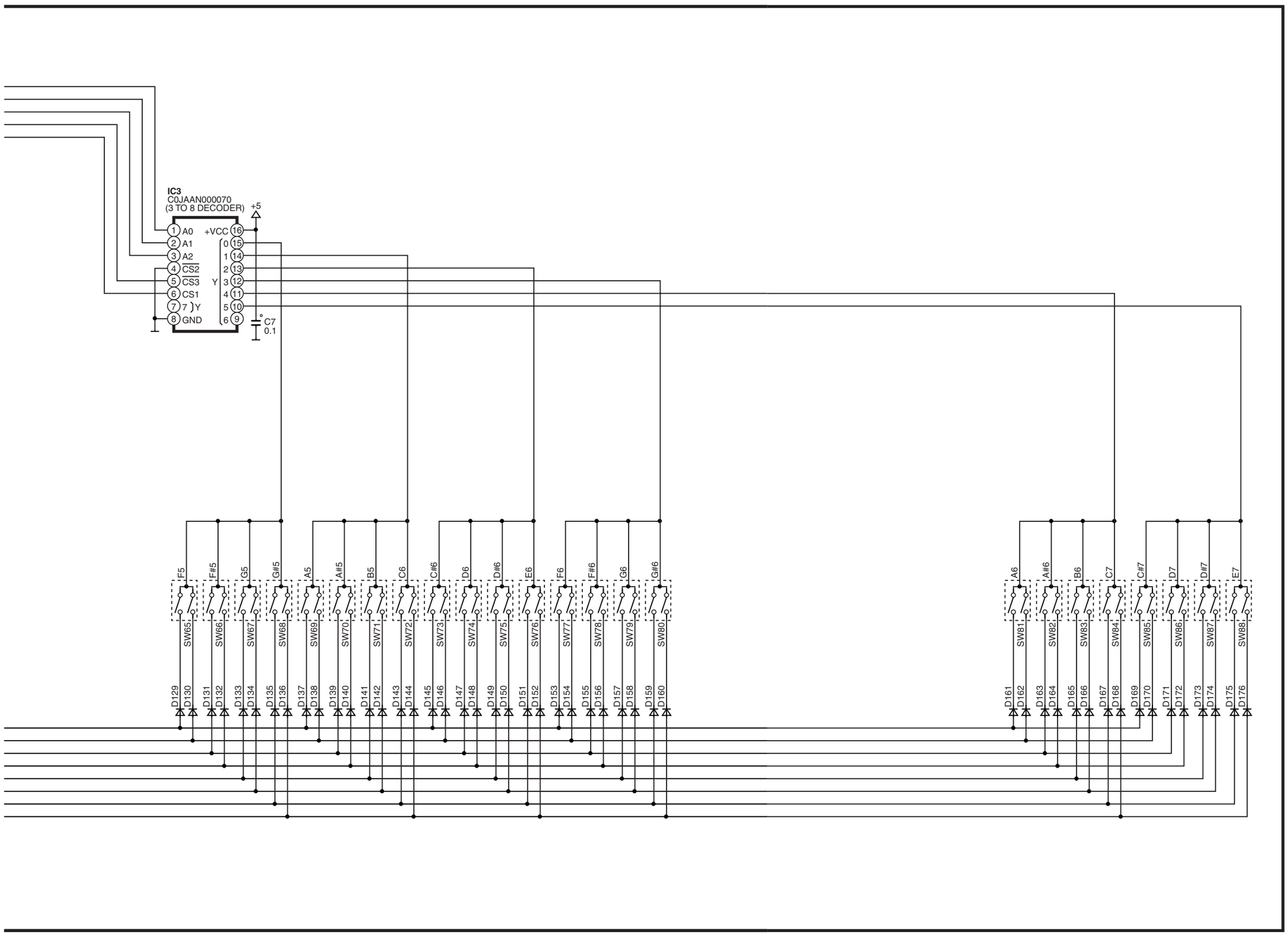
SCHEMATIC DIAGRAM-12

F MKB2 CIRCUIT

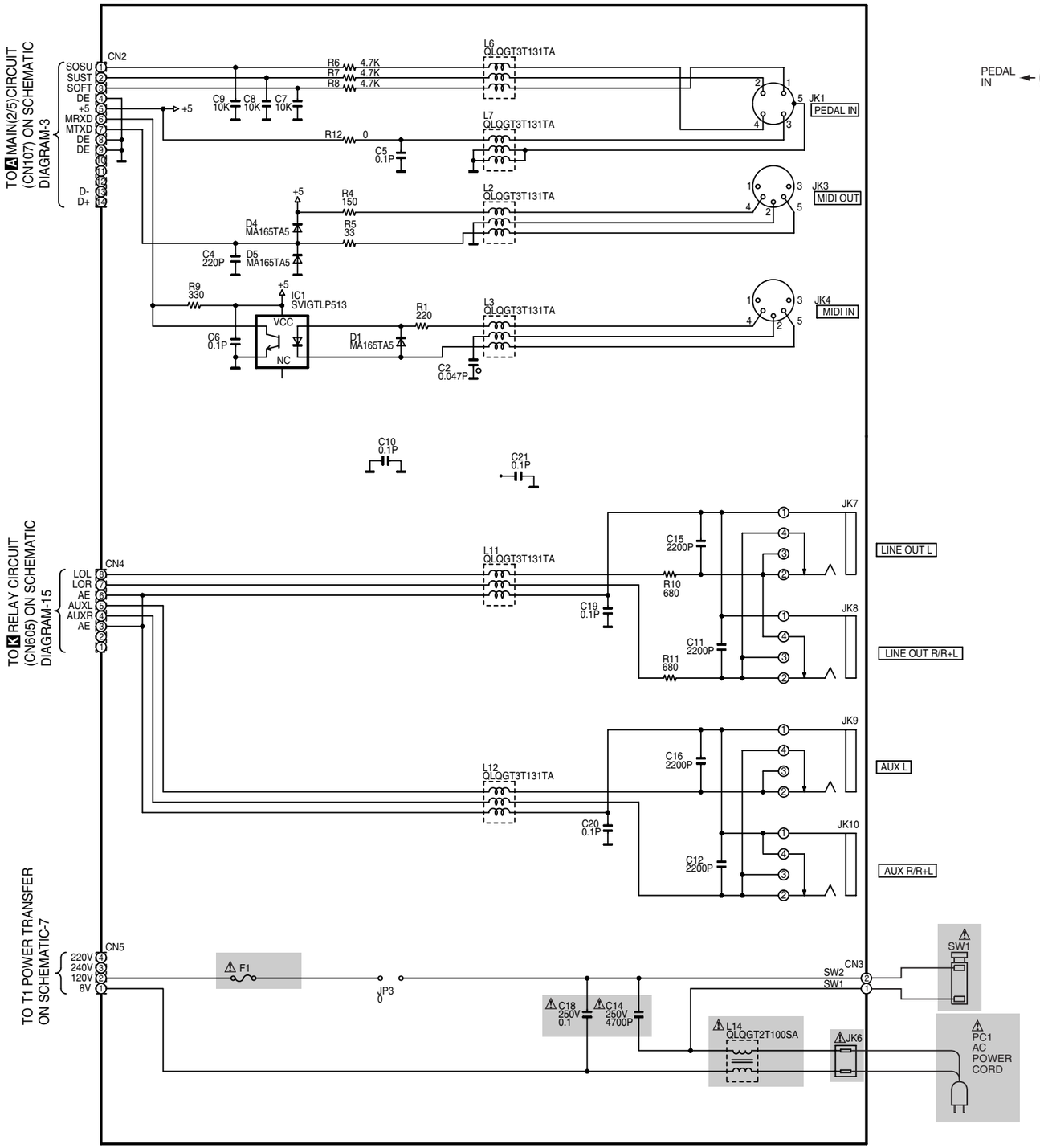


UNLESS OTHERWISE SPECIFIED:
DIODES ARE MA165TA5.

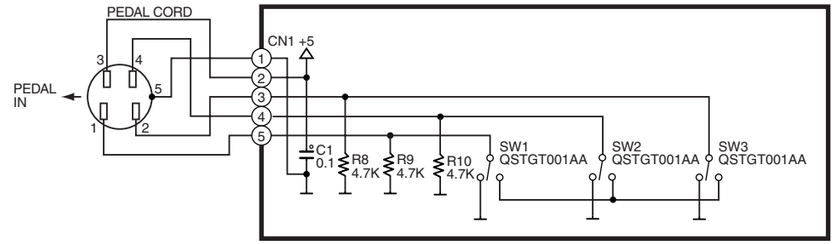
SCHEMATIC DIAGRAM-13



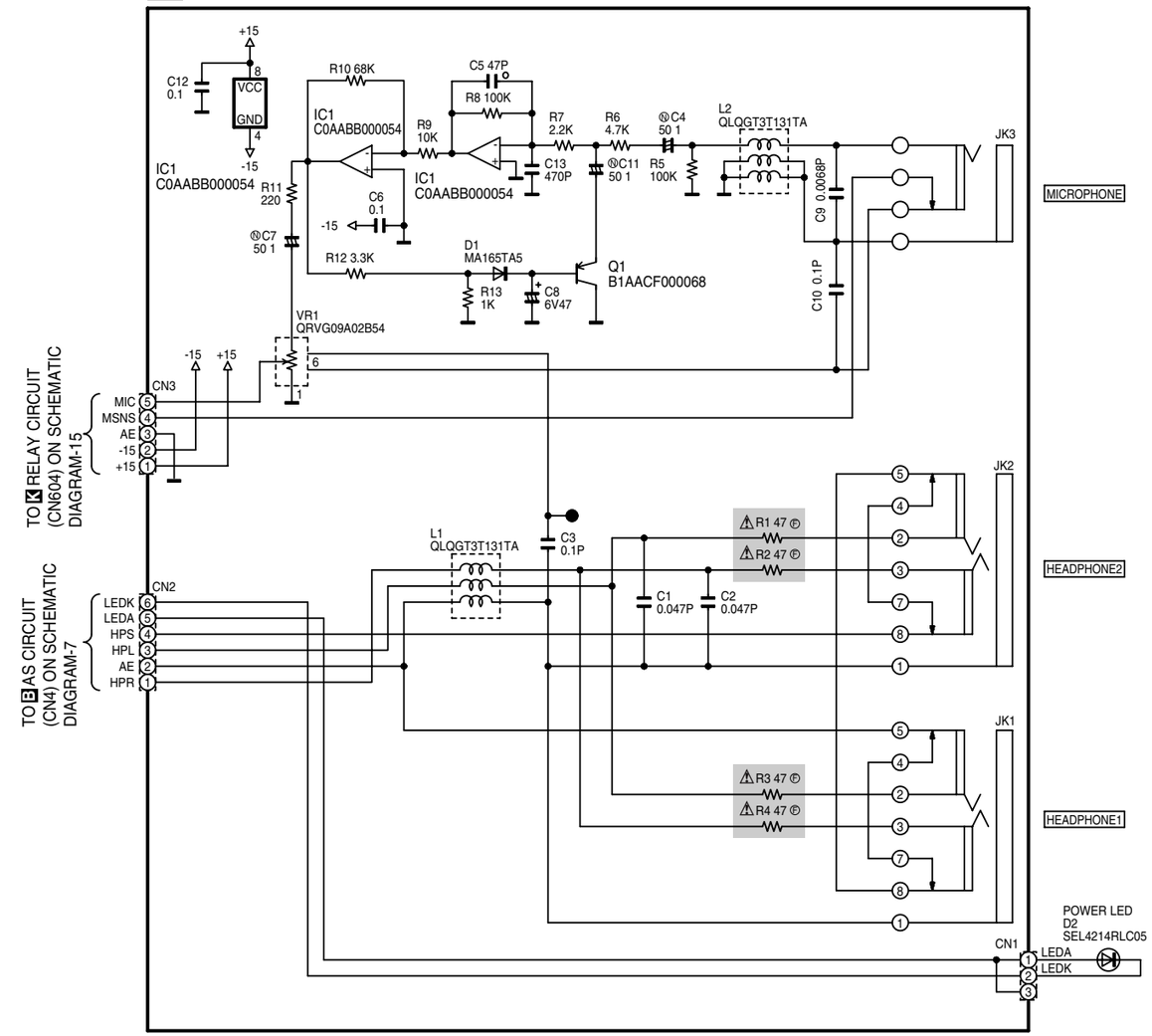
H JACK CIRCUIT



G PKB CIRCUIT

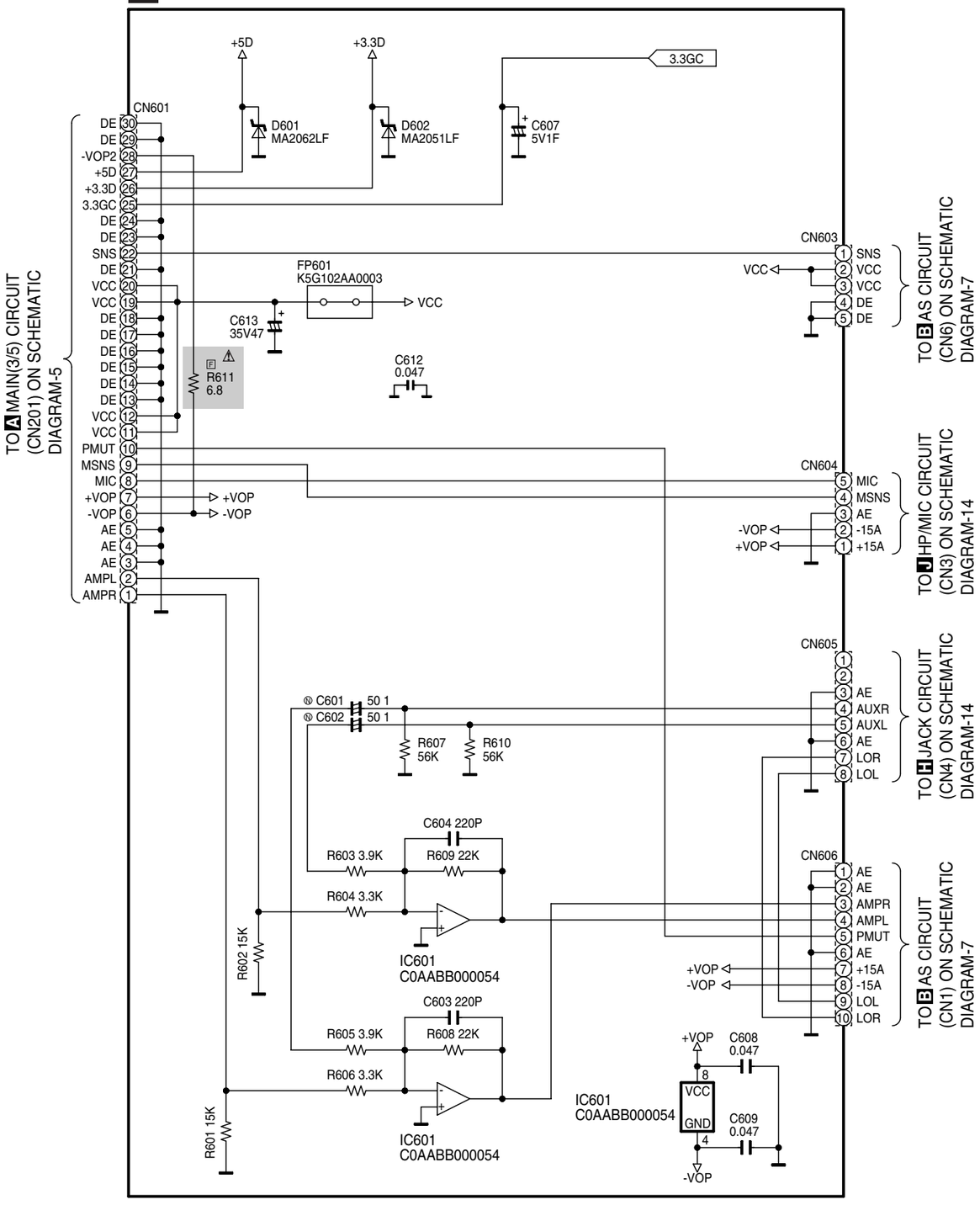


J HP/MIC CIRCUIT

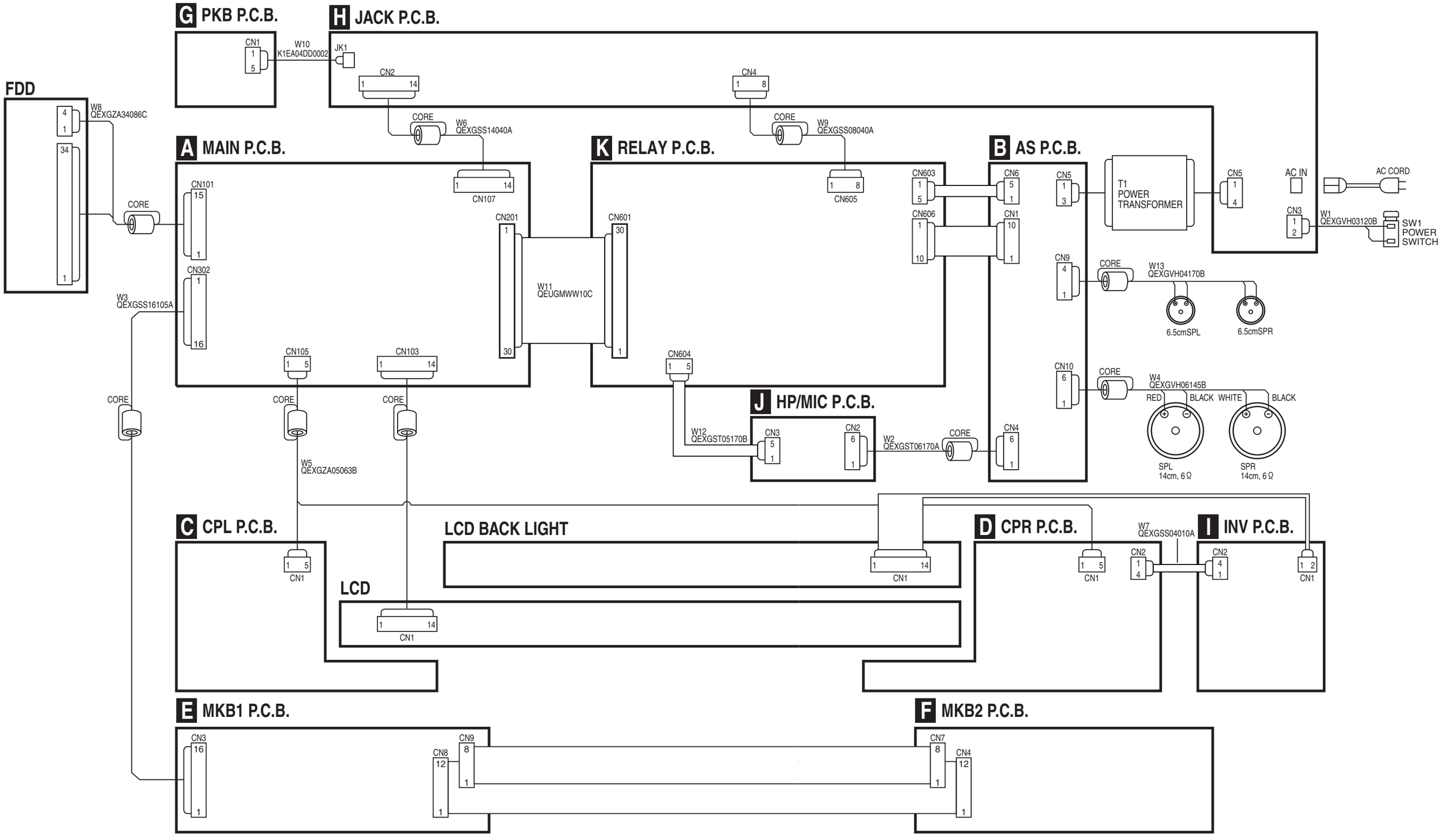


SCHEMATIC DIAGRAM-15

K RELAY CIRCUIT



SX-PR950 RELAY SCHEMATIC DIAGRAM



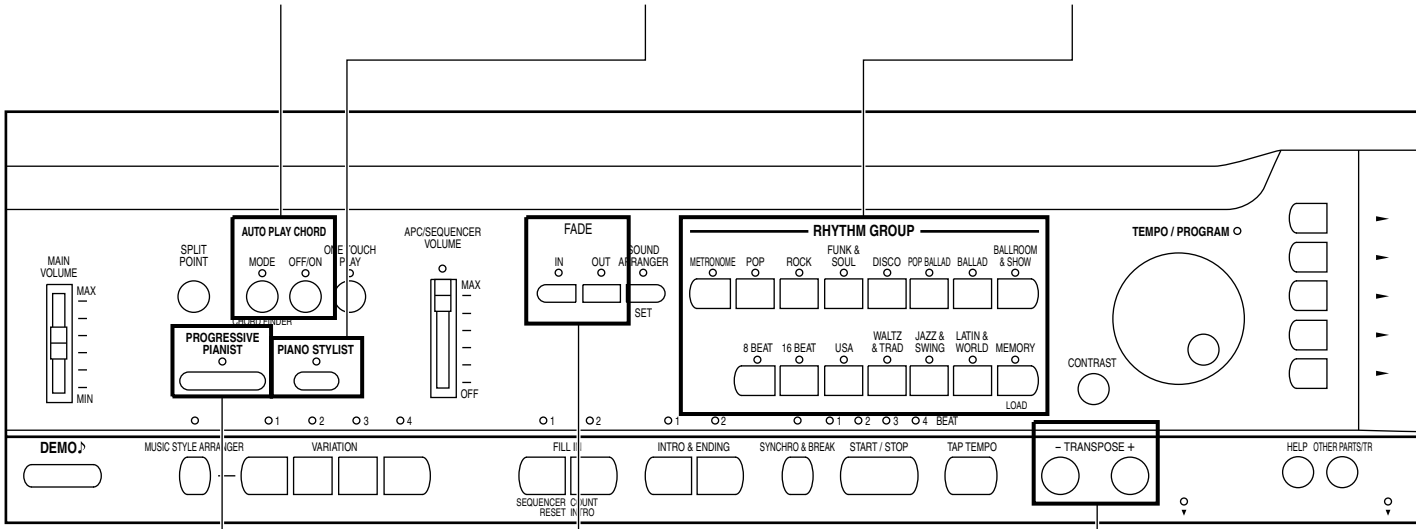
SX-PR950 WIRING CONNECTION DIAGRAM

Controls and functions

AUTO PLAY CHORD
Add an automatic accompaniment to your selected rhythm.

PIANO STYLIST
You can choose to have all the settings of this instrument automatically set.

RHYTHM GROUP
Various rhythm patterns are available for each rhythm group.



PROGRESSIVE PIANIST
Your piano offers a fun method of learning to play piano.

FADE IN/OUT
Begin your song with a slowly increasing volume, or end it by having the sound slowly fade away.

TRANSPOSE
Raise or lower the key of the entire keyboard.

■ **Tuning**
Unlike an acoustic piano, your PR Series Digital Ensemble never needs tuning.
The pitch of this instrument can be adjusted for when playing along with other instruments.

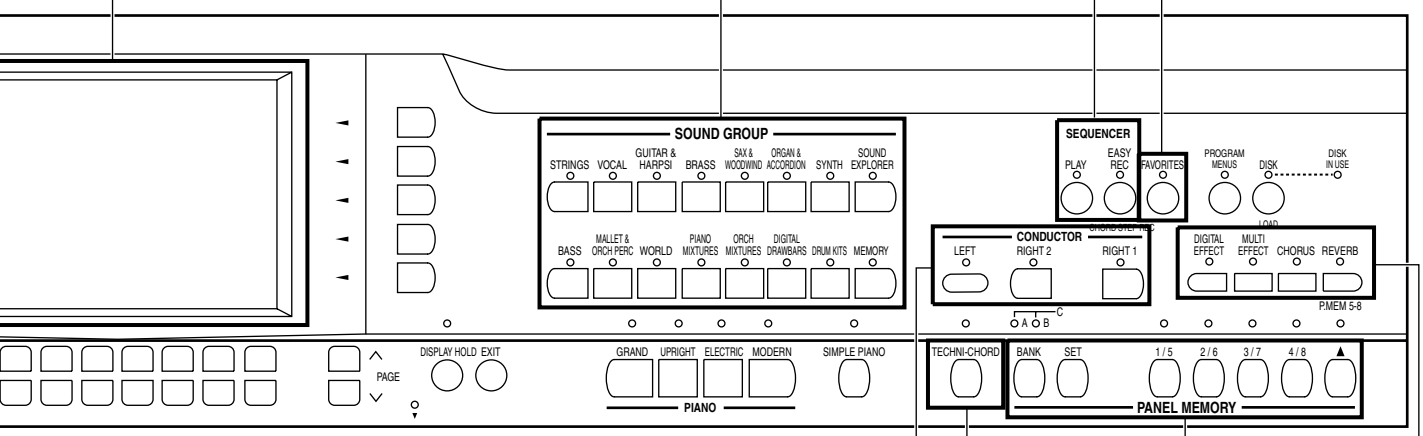
FAVORITES
Fashion a customized display in which all your favorite sounds, rhythms and styles etc. are assembled.

DISPLAY
Displays performance information, function settings and other messages.

- Use the **CONTRAST** buttons to adjust the display so that it is easy to read.

SOUND GROUP
Various sounds are available for each sound group.

SEQUENCER
Record and play back your performance.



CONDUCTOR
Assign a different sound to each part, then assign the desired parts to sections of the keyboard.

PANEL MEMORY
Store the panel settings, then recall them instantaneously just by pressing a button or two.

EFFECT
Add various effects to the sounds.

TECHNI-CHORD
Block chords are automatically added to the melody.

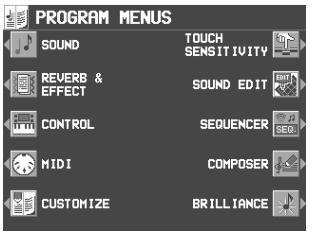
Initialize

This instrument has many settable functions and storable memories. However, you can return the settings and memory to the factory-preset status.

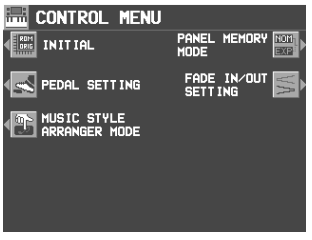
INITIAL

1. Press the **PROGRAM MENUS** button to turn it on.

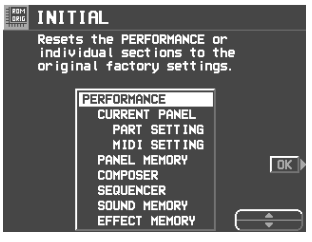
- The display changes to the following.



2. Select CONTROL.
   - The display looks similar to the following.



3. Select INITIAL.
   - This display changes to the following.



4. Use the ▲ and ▼ buttons to select the desired type of initialization.
   - PERFORMANCE includes all the items which are listed below it.

5. Press the OK button.
   - The display changes to the confirmation display. Press the YES button if you wish to execute the initialization. Press the NO button if you wish to cancel the procedure.

   - Initialization begins. When initialization is completed, “COMPLETED!” is shown on the display and the Keyboard returns to the normal performance mode.
   - The USER MIDI and FAVORITES are not initialized by this procedure.

You can also reset all the PERFORMANCE items with the following procedure:
Turn off the power to this instrument once. Then, while pressing the three lower left buttons in the **RHYTHM GROUP** section (**8BEAT, 16BEAT** and **USA**) at the same time, turn the power on again.

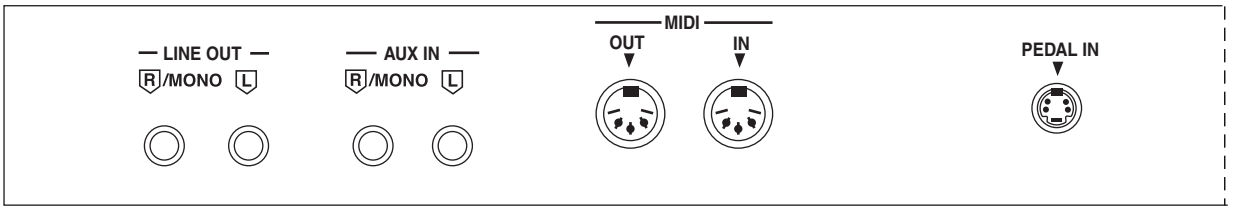
Power on settings

When the **POWER** button of this instrument is turned on, the settings below are automatically set to those suitable for piano performance.

Sound	**GRAND PIANO** (CONCERT)
CONDUCTOR	**RIGHT 1**
TRANSPOSE	C
SYNCHRO & BREAK	Off
AUTO PLAY CHORD	Off
All PART SETTING items for the RIGHT 1 part	Appropriate values
PEDAL SETTING	SOFT

- When you turn the power on, you can recall all the settings which were in effect at the time you turned the instrument off: while depressing the sustain (right) pedal, turn on the power. (However, this function only works for a few tens of minutes after the power is turned off.)

Connections (on the rear panel)

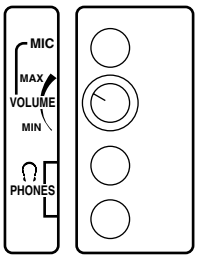


AUX IN
Other instruments such as a sound generator can be connected to this terminal, and the sound will be output from this instrument's speakers. To receive monaural sound, connect the other instrument to the **R/MONO** terminal. (Do not connect the **L** terminal.)

LINE OUT
By connecting an external high-power amplifier, the sound can be reproduced at a high volume. To output monaural sound, connect the external equipment to the **R/MONO** terminal. (Do not connect the **L** terminal.)

MIDI
These terminals are for connection to another MIDI instrument.

(beneath the left end of keyboard)



PHONES 2
Headphones can be connected to this instrument.
- When headphones are plugged into this jack, the speakers of this instrument are disabled.

MIC
A microphone can be connected to this instrument and the sound output through the speakers. Use the **VOLUME** control to adjust the volume.
- Effects such as reverb can be applied to the microphone input.

Symptoms which appear to be signs of trouble

	Phenomenon	Remedy
Sounds and effects	The buttons, keys, etc. malfunction.	• Turn off the **POWER** button once, then turn it on again. If this procedure is not successful, turn off the **POWER** button once. Then, while pressing the three lower left buttons in the **RHYTHM GROUP** section (**8BEAT, 16BEAT** and **USA**) at the same time, turn the **POWER** button on again. (Note that, in this case, all programmable settings, functions and memories return to their factory-preset status.)
	No sound is produced when the keys are pressed.	• The **MAIN VOLUME** is at the minimum setting. Adjust the volume with the **MAIN VOLUME** control. • The volumes for the selected parts are set to the minimum levels. Use the balance buttons to set the volumes of the relevant parts to appropriate levels. • The part is muted. • The LOCAL CONTROL for a part performed on the keyboard is set to OFF. Set the LOCAL CONTROL to ON.
	Only percussive instrument sounds are produced when the keyboard is played.	• In the **SOUND GROUP** section, the **DRUM KITS** button is on.
	The volume is very low when the keyboard is played.	• The volume setting in the **SEQUENCER** contents is very low. Follow the INITIAL procedure to reset the settings.
	The sound you hear is different from the sound you selected.	• This sometimes occurs when you play back **SEQUENCER** or **COMPOSER** data which was created on a different model, or when MIDI data is received from a connected instrument. Select the desired sounds again.
Rhythm	The rhythm does not start.	• The **DRUMS** volume is set to the minimum level. Use the balance buttons to set the **DRUMS** volume to an appropriate level. • A **SEQUENCER PLAY** button is on. When you are not playing back the **SEQUENCER** performance, turn off the **SEQUENCER PLAY** button. • CLOCK is set to MIDI. Set CLOCK to INTERNAL.
AUTO PLAY CHORD	No sound is produced for the automatic accompaniment, or only the sounds of some parts are produced.	• An **ACCOMP** part does not sound if its corresponding volume is set to the minimum level. Use the respective balance buttons to set the **ACCOMP 1–5** volumes to appropriate levels. • The **APC/SEQUENCER VOLUME** is at the minimum setting. Adjust the volume with the **APC/SEQUENCER VOLUME** control.
SEQUENCER	Storage is not possible.	• The remaining memory capacity of the **SEQUENCER** is 0. Follow the SONG CLEAR or TRACK CLEAR procedure to erase the memory.
	The playback measure indication is different from when the performance was recorded.	• The number of measures corresponds to the time signature of the rhythm selected at the start of recording. To change the rhythm in the middle of the song, record the rhythm change in the RHYTHM part.

	Phenomenon	Remedy
COMPOSER	Storage is not possible.	• The remaining memory capacity of the **COMPOSER** is 0.
	Setting the time signature is not possible.	• The time signature cannot be changed for a pattern which is currently recorded in the **COMPOSER**. If you wish to change the time signature, first follow the procedure to clear the memory.
	The playback timing of the rhythm pattern is different from the timing with which it was recorded.	• The QUANTIZE function was on when the pattern was recorded and the timing was automatically corrected. Set the quantize level to a smaller note unit or to OFF when recording.
Disk	The Disk Drive produces a noise during recording or playback.	• This occurs when the Disk Drive is reading a disk. It does not indicate a problem.
	When the procedure to load from a disk is performed, the contents of the memory are erased.	• When performing the load operation from a disk, the memory changes to that of the data loaded from the disk. If you wish to preserve a song which is stored in the memory, save it on a disk before performing the load procedure.
MiDI	Data cannot be exchanged through MIDI terminals.	• Match the channels on the transmitting side and the receiving side.
	The sound quavers or is distorted.	• When the **USB** terminal or both the **MIDI IN** and **OUT** terminals are connected to a computer, depending on the computer software the received data may be sent back to the instrument just as it is. Because of this the sound generated from the keys and the sound generated from the returned data are both produced, causing undesirable effects, such as the sounds canceling each other out, for example. In this case, either change the software settings to prevent received data from being returned, or set the MIDI LOCAL CONTROL to off.
Other	Noise from a radio or TV can be heard.	• This sometimes occurs when electrical equipment such as a radio or TV is used near the instrument. Try moving such electrical equipment further away from the instrument. • The sound may be coming from a nearby broadcast station or amateur radio station. If the sound is bothersome, consult your dealer or service center.
	The cabinet becomes warm during use.	• This instrument has a built-in power source that heats the cabinet to some degree. This is not an indication of trouble.

Error messages

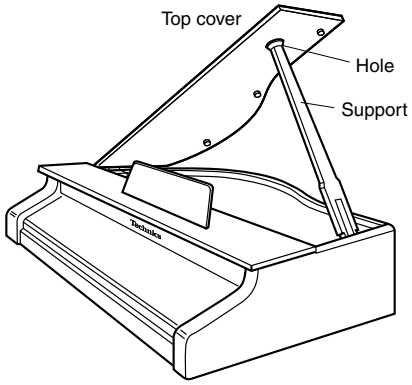
No.	Contents
00	The data on the disk that you are using is for a different product.
01	An error has occurred while the disk was loading. Please try again!
02	There is no disk in the Disk Drive.
03	The file that you tried to load is empty.
05	An error has occurred while the disk was saving. Please try again!
06	The disk that you are using is write protected. Please remove the write protection and try again.
07	The disk that you are using is full. Please use another disk.
08	An error has occurred while the disk was formatting. The disk that you are using may be faulty. Please try formatting another disk.
10	The data is already copy protected.
15	The song you are trying to save is empty.
16	This STANDARD MIDI FILE is incompatible with this instrument and cannot be loaded.
17	This is not a STANDARD MIDI FILE.
18	The timebase (PPQ resolution) that you tried to load is not 24/48/96/192/288/384 PPQ.
20	A problem has occurred with your **SEQUENCER** Data. This might be due to a damaged or faulty disk.
21	Memory full
22	It is necessary to press REC STOP to complete this procedure.
23	It is impossible to change the time signature because it has already been set in the existing tracks.
24	A rhythm track already exists. It is impossible to assign two tracks to rhythm.
25	It is only possible to change the velocity on a melody track.
26	It is only possible to merge melody tracks. Tracks such as rhythm, chord and control cannot be merged.

No.	Contents
27	It is only possible to copy melody tracks. Tracks such as rhythm, chord and control cannot be copied.
28	This song is too long to be saved as a MIDI file.
29	The MIDI file that you have tried to load exceeds the memory capacity of this instrument and cannot be played. The **SEQUENCER** memory has been cleared.
30	It is not possible to change the time signature of a **COMPOSER** pattern after it has been recorded. If you want to proceed, you must first clear the entire **COMPOSER** pattern.
31	The time signature of the pattern from which you are copying is different from the **COMPOSER** memory that you are using. Either:Change the time signature of the **COMPOSER** memory or:Copy from a pattern that has the same time signature
32	Memory full
33	Select a Track before setting parameters for AUTO PUNCH RECORD.
43	The file that you are trying to load was saved on a previous model. It is only possible to load using the “PERFORMANCE” option.
44	It is impossible to edit a Drum Kit. Please select a different sound from any group except Keyboard Percussion.
46	It is only possible to insert MELODY Tracks. Tracks such as RHYTHM, CHORD and CONTROL cannot be inserted.
47	This procedure is not possible with a composer pattern or the metronome. Please select a preset rhythm pattern.
54	It is not possible to record using preset banks, compile banks, or control banks. Please select one of the user banks.
55	Special tracks such as CHORD (APC), RHY and CTL exist in the song from which you are copying and are incompatible with the destination song because it is in the GM mode.

No.	Contents
56	AUTO PUNCH recording has been unsuccessful because SEQUENCER operation was interrupted before the PUNCH OUT measure was reached.
58	The song that you have tried to load exceeds this instrument's available memory and cannot be loaded. The selected song memory has been cleared.
62	The computer connection is not active because the computer port switch is set to MIDI. Please turn the power off, set the switch to the desired setting and turn the power back on.
64	Please select the Panel Memory that you want to name.
65	It is not possible to use the CHORD FINDER in this mode. Please select CHORD FINDER from HOME page or CHORD STEP RECORD page.
66	SOLO pads are special pads which include Chord information. Pleases use SOLO pads when the rhythm and accompaniment is playing.
67	There are no APC or CHORD tracks. Select and APC track or CHORD track, and try again.
68	It is not possible to record directly into the SOLO pads. Record on the SEQUENCER and Copy the melody and chord information into a SOLO pad.
69	It is not possible to delete all measures.
70	It is not possible to insert over 16 measures in a PATTERN.
71	It is not possible to set the start measure to the measures you set to copy.

How to open the top cover

You can open the cover and lift the support into an upright position.



Warning!

- The piano top cover is quite heavy, and when opening it, be sure to insert the support into the hole to secure the top cover in the open position. Be careful when closing the top cover not to catch fingers or clothing under the top cover or in the hinges.
- Children should be advised not to open or close the top cover, and should not be permitted to operate the piano without adult supervision.

The following mark and symbols are located on bottom of the unit.

CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE SCREWS. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Care and maintenance

■ Care of the finished surfaces

- To dust the piano, use a feather duster or wipe gently with a soft cloth.
- To avoid scratching the surface, refrain from applying too much pressure when dusting the piano.

Never use petroleum-based solvents such as thinner or benzene, and do not use chemically treated dust cloths, as these products will damage the finish of your piano.

■ Caution for use

- Do not place vinyl products, books with vinyl-treated covers, plastic erasers, etc., directly on the piano.
- Do not place vases or other containers of liquids on the piano.
- Please read the safety instructions on page 6 on Operating Instructions.

CAUTION:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

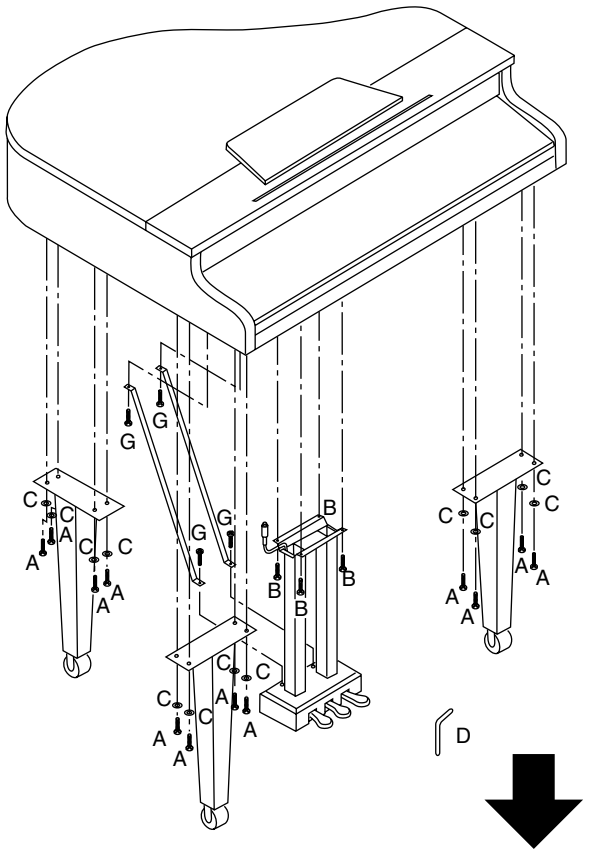
Any unauthorized changes or modifications to this equipment would void the user’s authority to operate this device.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Marking sign is located on bottom of the unit.

Follow the steps below to assemble your Technics piano. Make sure you are using the correct parts and that they are in the correct direction.

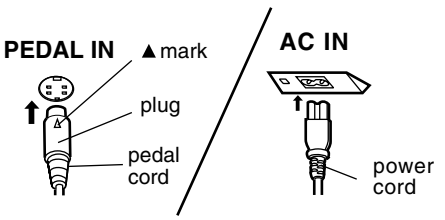
- At least 2 people are required for assembly.
- To disassemble the piano, reverse the procedure.



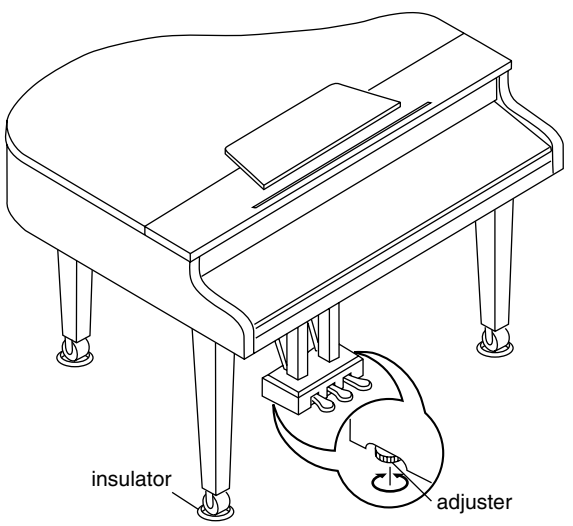
A: Black screws (long).....12
B: Black screws (short).....4
C: Washers.....12
D: #4 Hexagonal key.....1
G: Brass-colored screws.....4

- Following the assembly, connect the respective cords.

(Piano bottomside)



- Use the included clamps to secure the cords.



- Place the insulators under the casters, positioning the **Technics Piano** in the desired location.
- Use the adjusters to make the pedal unit secure.

Caution

If the **Technics Piano** is to be moved, be sure to first shorten the adjusters in order to prevent pedal unit damage and scratching the floor.

■ Confirm

After assembling, check these points.

- Are any parts left over?
  → Check the assembly procedure again.
- Does the piano rattle when it is rocked?
  → Make sure all the screws are securely tightened.
- Is the power cord firmly inserted?
  → Check again.
- Is the plug of the pedal cord inserted as far into the connector terminal as it will go?
  → If it is not completely inserted, the sustain and other pedal functions may not work.
- Does the pedal box move when the pedals are pressed?
  → Turn the adjuster to stabilize the pedal box.

- When the piano has been moved or transported, retighten the screws securely.